

PTED 7281-05

INDEPENDENT PROJECT:

LF08 MATH CONTENT PEDAGOGY: GRADES P-5

Semester Hours 3
Semester/Year: Summer 2008
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Online Support:

WebCT Login and Help page: <http://nibbler.westga.edu/webct/public/home.pl>
Distance Learning Library Resources: <http://www.westga.edu/~library/depts/offcampus/>
Ingram Library Information: <http://www.westga.edu/~library/info/library/shtml>
UWG Distance Education: <http://www.westga.edu/~distance/>

COURSE DESCRIPTION

Prerequisite: Bachelor's Degree and Academic Advisor's Approval

Concepts and materials which are appropriate for mathematics education of P- 5 children will be investigated. Strategies for effectively implementing Georgia Performance Standards will be modeled and discussed. In addition, research on the use of process education in these areas will be considered.

CONCEPTUAL FRAMEWORK

The conceptual framework of the College of Education at UWG forms the basis on which programs, courses, experiences, and outcomes are created. By incorporating the theme "Developing Educators for School Improvement," the College assumes responsibility for preparing educators who can positively influence school improvement through altering classrooms, schools, and school systems (transformational systemic change). Ten descriptors (decision makers, leaders, lifelong learners, adaptive, collaborative, culturally sensitive, empathetic, knowledgeable, proactive, and reflective) are integral components of the conceptual framework and provide the basis for developing educators who are prepared to improve schools through strategic change. National principles (NBPTS 1, 2, 3, 4 & 5), propositions (NBPTS), and standards (Learned Societies) also are incorporated as criteria against which candidates are measured.

The mission of the College of Education is to develop educators who are prepared to function effectively in diverse educational settings with competencies that are instrumental to planning, implementing, assessing, and re-evaluating existing or proposed practices. This course's objectives are related directly to the conceptual framework and appropriate descriptors, principles or propositions, and Learned Society standards are identified for each objective. Class activities and assessments that align with course objectives, course content, and the conceptual framework are identified in a separate section of the course syllabus.

COURSE OBJECTIVES

The students will:

1. address the relationships between children and mathematics (National Council of Teachers of Mathematics, 2000; Stein, et. al., 2000; Moon & Schulman, 1995);

(Decision Makers, Lifelong Learners, Adaptive, Empathetic, Knowledgeable, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.5, 2.9)

2. recognize the importance of the qualitative dimensions of children's learning (National Council of Teachers of Mathematics, 2000; Stein, et. al., 2000; Moon & Schulman, 1995);

(Lifelong Learners, Adaptive, Empathetic, Knowledgeable, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.5, 2.9)

3. build beliefs about what mathematics is, about what it means to know and do mathematics, and about children's view of themselves as mathematics learners in a P-5 classroom (National Council of Teachers of Mathematics, 2000; Stein, et. al., 2000; Moon & Schulman, 1995);

(Lifelong Learners, Adaptive, Empathetic, Knowledgeable, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.5, 2.9)

4. gain an understanding of the Standards 2000 (NCTM, 1998) and apply recommended strategies in the P-5 classroom (NCTM, 1990; Stein, et. al., 2000; Moon & Schulman, 1995);

(Lifelong Learners, Adaptive, Empathetic, Knowledgeable, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.3, 2.8)

5. gain an understanding of the constructivist theory of math instruction as these relate grades P-5 (NCTM, 1998, 1990, 2000; Stein, et. al., 2000; Moon & Schulman, 1995); and

(Adaptive, Empathetic, Knowledgeable, Proactive, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.8)

- gain an understanding of alternative assessment for use with instruction in mathematics as this relates to grades P-5 (NCTM, 1990, 2000; Stein, et. al., 2000; Moon & Schulman, 1995).

(*Lifelong Learners, Adaptive, Empathetic, Knowledgeable, Proactive, Reflective; NBPTS 1, 2, 3, 4, 5; NCTM 2.8*)

TEXTS, READINGS, AND INSTRUCTIONAL RESOURCES

Required Texts: NONE

*Selected journal articles will be used based on individual student needs

Readings:

AIMS Education Foundation. *Activities integrating mathematics and science*. (1995). Fresno, CA: AIMS Education Foundation

Barber, J. (1988). *Bubble-ology*. Berkeley, CA: Great Explorations in Math and Science (GEMS).

Bassarear, T. (2005) *Mathematics for elementary school teachers, 3rd edition*. Boston, MA: Houghton Mifflin Company.

Clarke, D. (1999). *Constructive assessment in mathematics: Practical steps for classroom teachers*. Berkeley, CA: Key Curriculum Press.

Dyer, M., & Moynihan. (2000). *Open-ended question in elementary mathematics instruction & assessment*.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2001). *Mathematics assessment: Cases and discussion questions for grades K-5*. Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2001). *Learning from assessment: Tools for examining assessment through standards*. Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2001). *Mathematics assessment: Myths, models, good questions, and suggestions*. Reston, VA: National Council of Teachers of Mathematics.

Van de Walle, J. A. (2007) *Elementary and middle school mathematics: Teaching developmentally, 6th edition*. Boston, MA: Pearson Education, Inc.

ASSIGNMENTS, EVALUATION PROCEDURES, AND GRADING POLICY

Assignments

- Learning Festival:** Each student will attend the University of West Georgia Learning Festival in its entirety. Students are expected to be present and attend morning sessions and to each class session from 1:00 - 3:00pm. Each class member should receive a **copy of the Learning Festival Session Form** by which each student will document the sessions attended. Student will submit 3-5 page reflection paper discussing their experiences and knowledge gained from attending the UWG Learning Festival morning

sessions. (Graded by a Rubric; Objectives: 1, 4, & 5) **Paper Due: Friday, June 13, 2008.**

2. **Math/Science Workshop:** Each student will attend the PRISM Elementary Math/Science Workshop on **June 16, 2008 from 8:30am – 3:30pm.** This workshop will extend the pedagogical content knowledge learned in the UWG Learning Festival. Students will participate fully in all workshop activities. Each class member will complete a workshop evaluation form after the conclusion of the workshop. (Graded by checklist; Objectives: 1, 4, & 5)
3. **Classroom Application Reflection:** Students in small groups will participate in a synchronous online reflective discussion on three or more strategies for effectively implementing the GPS they plan on using in their classrooms in the upcoming school year. Students will discuss the reasons for their selections and jointly analyze barriers and arrive at solutions for successfully implementing selected strategies. The dates for these discussions will be finalized in class. (Graded by checklist; Objectives: 1, 4, & 5)
4. **Professional Growth and Development Plan:** Following the group discussions, students will create a 2008-2009 GPS Professional Growth and Development plan. The GPS plans must reflect knowledge gained from the UWG Learning Festival and from the PRISM Elementary Math/Science Workshop as well as the small group discussion. These will be posted on the course WebCT website. Graded by a Rubric; Objective 3) **Postings will be due Monday, June 30, 2008.**
5. **Article Reflections:** Students will find and reflect on five journal articles related to their GPS plans. Each journal article reflection should follow the *Learning From A Professional Journal* guidelines. (Graded by a Checklist; Objective 3) Journals will be due on **July 2, 2008**

Tardy Submission of Assignment Policy: Assignments that are submitted after the due date will be reduced by 10%.

Evaluation Procedures

Learning Festival	50 points	A = 100 - 90%
Math/Science Workshop	50 points	B = 89 - 80%
Reflective Discussion	50 points	C = 79 - 70%
GPS Professional Growth Plans	100 points	D = 69 - 60%
Journal Article Reflections	50 points	
Professionalism	20%	
Total	300 points	

Professionalism Policy

Professionalism will be graded as follows:

Grade	Tardies/Left Early	Unexcused Absences	Unprofessional Conduct	Late Assignments
A	0-1	0	0	0
B	2-3	1	1 event	1
C	4-5	2	2 events	2
D	5-8	3	3 events	3

Attendance Policy: Students are expected to attend class and be respectful of the instructor and other students. Since emergencies do occur, you will be allowed one absence without grade reduction. Absences beyond one will require a written summary or power point presentation of the chapters covered during that class. 10% will be deducted from your final grade for each absence not accompanied by a summary/Powerpoint.

DATE CLASS TOPIC OUTLINE

Session 1 - 6/2	Course Introduction & Effectively Teaching Numbers and Operations GPS
Session 2 - 6/3	Effectively Teaching Measurement GPS
Session 3 - 6/4	Effectively Teaching Algebra GPS
Session 4 - 6/5	Effectively Teaching Data Analysis and Probability GPS
Session 5 - 6/6	Effectively Teaching Geometry GPS
Session 6 - 6/16	K-2 and 3-5 Math/Science Workshop
Session 7 -	Synchronous Group Discussions
Session 8 - 6/30	Professional Growth Plans
Session 9 - 7/2	Article Reflections Sharing and Course Evaluations

ACADEMIC HONESTY

Students are expected to adhere to the highest standards of academic honesty. Plagiarism occurs when a student uses or purchases ghost-written papers. It also occurs when a student utilizes the ideas of or information obtained from another person without giving credit to that person. If plagiarism or another act of academic dishonesty occurs, it will be dealt with in accordance with the academic misconduct policy as stated in *The Student Handbook*, *Undergraduate Catalog*, and *Graduate Catalog*.