CPSE 462 - Tch Math to Stdnts w/Disablts
Spring 2014

Section 001: 341 MCKB on T Th from 1:00 pm - 3:50 pm

Instructor/TA Info

Instructor Information

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Course Information

Description

This course prepares participants to teach mathematics to students with disabilities. Participants will learn research-validated methods for assessment, planning, and explicit and cognitively-guided instruction for math skills and concepts.

Materials

Image	Item	Vendor	Price (new)	Price (used)
	Elementary Mathematics Is Anything but Elementary: Content and Methods From A Developmental Perspective Required by Bahr, Damon L. Cengage Learning; Edition 1 (1229670000) ISBN: 9780618928170	BYU Bookstore	206.35	154.80

Grading Scale

Grades	Percent
A	95%
A-	91%
B+	88%
B	84%
B-	81%
C+	78%
C	74%
C	71%

C-	71%
D+	68%
D	64%
D-	61%
E	0%

Learning Outcomes

Current mathematics research

1. Describe research and results for current mathematics research for National Council of Teachers of Mathematics standards.

Focused and Survey Curriculum Based Assessment

2. Develop Focused and Survey Curriculum Based Assessment.

PLAAFP

3. Write Present Levels of Academic and Functional Performance (PLAAFP) statements and IEP goals based on informal assessment data.Create a scope and sequence of skills.

IEP goals and objectives lesson plan

4. Write lesson plans to address IEP goals and objectives.

Instruction presentation techniques

5. Demonstrate direct instruction presentation techniques.

Data systems for monitoring student progress

6. Design data systems for monitoring student progress.

Morningside Math lesson

7. Demonstrate one Morningside Math lesson, with data management

Grading Policy

- All assignments are due in full on the date indicated.
- Assignments submitted one class period after the due date will earn up to 50% credit. Assingments will not be accepted more than one class date late.

Attendance Policy

You will earn 2 points for arriving to class on time, 1 point for arriving after the prayer, and 0 points for missing class.

Bibliography

Ashlock, R. B. (1998). *Error patterns in computation* (7th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

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Cox, L. S. (1975). Diagnosing and remediating systematic errors in addition and subtraction computations. *The Arithmetic Teacher, 22*, 151-177.

Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). *Assisting students struggling with mathematics: Response to Intervention (RtI) for elementary and middle schools* (NCEE 2009-4060). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/publications/practiceguides/.

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Ives, B., & Hoy, C. (2003). Graphic organizers applied to higher-level secondary mathematics. *Learning Disabilities Research & Practice, 18*(1), 36-51.

Lovitt, T. C. (1995). *Tactics for teaching* (2nd ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

Lyons, I. M. & Beilock, S. L. (2011). Mathematics anxiety: Separating the math from the anxiety. *Cerebral Cortex, 22*(9), 2102-2110.

Mastropieri, M. A., Scruggs, T. E., & Shiah, S. (1991). Mathematics instruction for learning disabled students: A review of research. *Learning Disabilities Research and Practice, 6*, 89-98.

Miller, A.D., & Heward, W.L. (1992). Do your students really know their math facts? Using daily time trials to build fluency. *Intervention in School and Clinic, 28*(2), 98-104.

Strawser, S., & Miller,S. P. (2001). Math failure and learning disabilities in the postsecondary student population. *Topics-in-Language-Disorders, 21*(2), 68-84.

Swanson, H. L. (1999). Instructional components that predict treatment outcomes for students with learning disabilities: Support for a combined strategy and direct instruction model. *Learning Disabilities Research and Practice,14*(3), 129-40.

Utah State Office of Education. (2009). *Utah's 3-tier model of mathematics instruciton.* Salt Lake City, UT: Author. Available at http://www.schools.utah.gov/sars/DOCS/resources/math.aspx (http://www.schools.utah.gov/sars/DOCS/resources/math.aspx)

Wilson, C. L. & Sindelar, P. T. (1991). Direct instruction in math word problems: Students with learning disabilities. *Exceptional Children, 57*(6), 512-19.

Conceptual Framework for this Course

Moral endeavor in this course is established upon principles of eternal and unchanging truth contained in the restored gospel of Jesus Christ. Prophets of God proclaim that "all human beings—male and female—are created in the image of God. Each is a beloved spirit son or daughter of heavenly parents, and, as such, each has a divine nature and destiny."[1]

Teaching is a moral endeavor that recognizes and responds to the divine destiny of each student. Moral teachers ensure that students master the knowledge, skills, and dispositions necessary to realize their divine potential for growth and achievement. Therefore, teachers:

1. Recognize and cultivate the individual worth of each student
2. Embrace and apply proven instructional practice
3. Establish and maintain positive, supportive learning environments
4. Value and enact respectful interpersonal behavior and responsible citizenship.

Four assumptions guide our work:

1. All children can learn.
2. Schools exist to advance student learning.
3. Teachers are accountable for student learning.
4. Accountability is measured by data.

[1] The Church of Jesus Christ of Latter-day Saints (1995). *The family: A proclamation to the world*. Salt Lake City, UT: Author.

Course Objectives

Participants will

1. Administer and score a general math CBA for multiple elementary students.
2. Use math CBA to assess elementary students.
3. Record and analyze CBA data and use to group students for instruction.
4. Plan two summer practicum math units with accompanying focused CBAs.
5. Create and teach five direct instruction math lessons.
6. Create and teach one cognitively-guided instruction (CGI) lesson.

The Mission of Brigham Young University Special Education

We maximize the potential of diverse learners with individualized educational needs to elevate their quality of life. We accomplish this by supporting the mission and aims of a BYU education as we integrate teaching, research, and service. We specifically:

- prepare competent and moral educators who select, implement, and evaluate research-based effective teaching practices and appropriate curriculum for learners with special needs.
- prepare master special educators who will provide collaborative leadership to foster the moral development and improve learning and social competence of exceptional students with challenging behaviors.
- add to the knowledge base of special education and related disciplines through research.
- serve and advocate for learners with individulized educational needs and others who support them.

Methodologies/Teaching Strategies

This course employs whole-group instruction, small-group application and practice, and digital and internet exploration.

Assignments

Assignment Description

Bahr Ch. 1.

May 01	Due: Thursday, May 01 at 1:00 pm

Create a bulleted outline defining and describing the 5 math processes.
Example:
1. Problem solving

- task for which the solution method is not known in advance
- context in which mathematical understanding is acquired
- requires environment in which students feel they can safely explore, take chances, share successful and unsuccessful conjectures/stratetiges, and argue perspectives.
- metacognitive component: students must understand problem components and question
- teachers promote thinking by asking questions that encourage reflection

Bahr Ch. 2

May 06	Due: Tuesday, May 06 at 1:00 pm

1. Bullet outline: learning theory, types of tools, making connections between concrete and abstract

Teach DI lesson in class

May	Due: Thursday, May 08 at 11:59 pm

08

Resurrect your final DI math lesson plan from CPSE 452 and bring a PAPER copy to class. You will teach a group of your peers, and you will do it well...or else!

Bahr Ch. 3

May 13 Due: Tuesday, May 13 at 1:00 pm

Bullet outline: Learning the basics of addition and subtraction

Midterm Exam

May 20 Due: Tuesday, May 20 at 1:00 pm

DI Lesson video: Summer unit

May 20 Due: Tuesday, May 20 at 11:59 pm

Draft and teach a fully-scripted lesson plan for a skill from one of your summer practicum units. Video record the lesson, submit lesson plan and post video in the *Digital Dialogue* 5/20 folder.

Bahr Ch. 4

May 22 Due: Thursday, May 22 at 1:00 pm

Bullet outline: Understanding place value

Bahr Ch. 5

May 27 Due: Tuesday, May 27 at 1:00 pm

Bullet outline: Invented algorithms

DI Lesson Video: Summer unit

May 27 Due: Tuesday, May 27 at 11:59 pm

Draft and teach a fully-scripted lesson plan for one of your summer units. Video record the lesson, submit lesson plan and post video in the *Digital Dialogue* 5/27 folder.

Summer math units

May Due: Thursday, May 29 at 1:00 pm

29

Create two (2) summer math units based on your CBA assessment data. Use the assigned unit planning form. Submit unit plans to the instructor.

Bahr Ch. 6

May 29 Due: Thursday, May 29 at 1:00 pm

Bullet outline: Understanding multiplication and division

DI Brief form video: Summer unit

Jun 03 Due: Tuesday, Jun 03 at 1:00 pm

Draft and teach a brief-form lesson plan for one of your summer units. Video record the lesson, submit lesson plan and post video in the *Digital Dialogue* 6/3 folder. Due at beginning of class.

Bahr Ch. 7

Jun 03 Due: Tuesday, Jun 03 at 1:00 pm

Bullet outline: Multidigit problems

Bahr Ch. 10

Jun 05 Due: Thursday, Jun 05 at 1:00 pm

Bullet outline: Part-whole fractions, part-set fractions, other fraction notions

DI Brief lesson video: Fractional sense

Jun 10 Due: Tuesday, Jun 10 at 1:00 pm

Draft and teach a brief-form lesson plan addressing some aspect of fractional sense for your assigned summer grade level. Video record the lesson, submit lesson plan and post video in the *Digital Dialogue* 6/10 folder. Due at beginning of class.

Attendance

Jun 12 Due: Thursday, Jun 12 at 1:00 pm

2 pts. awarded for each class fully attended. 1 pt. for arrival after class prayer.

CGI video lesson: Summer unit

Draft and teach a CGI lesson plan addressing a concept from your summer math units. Video record the lesson, submit lesson plan and post video on *Digital Dialogue*. Due at beginning of class.

Categories	Percent of Grade
Chapter outlines	29.63%
Direct Instruction Lesson in class	3.7%
Direct Instruction VIDEO	30.37%
CGI Lesson in Class	0%
CGI VIDEO	5.56%
Summer Unit Plans	11.11%
Exams	9.26%
Attendance	10.37%

Schedule

Date	Topic	Readings	Assignments
T - Apr 29	Introduction and overview Utah Math Common Core	Bahr Preface pp. xiii-xviii	
Th - May 01	Mathematical thinking Math CBA for Practicum	Bahr Ch. 1	**Bahr Ch. 1.**
T - May 06	Early math concepts: Number sense	Bahr Ch. 2	**Bahr Ch. 2**
Th - May 08	Early math concepts: Developmental phases for numbers		**Teach DI lesson in class**
T - May 13	Single-digit addition/subtraction: Operation sense and problem types	Bahr Ch. 3	**Bahr Ch. 3**
W - May 14	**Practicum: CBA assessment in summer schools**		
Th - May 15	Single digit		Score math assessments

Th - May 15	Single-digit addition/subtraction: Problem-solving strategies, fluency instruction Raising Achievement by Measuring Performance (RAMP) Summer CBA scoring and grouping		Score math assessments, group students for summer Practice fluency program in class
T - May 20	**Midterm Exam** Numeration and place value: Understanding place value **Midterm Exam**	Bahr Ch. 4	**DI Lesson video: Summer unit**
Th - May 22	RAMP number fact families Numeration and place value: Working with larger numbers		Draft summer math units **Bahr Ch. 4**
M - May 26	**Memorial Day Holiday**		
T - May 27	Multidigit addition/subtraction: Constructing mental concepts	Bahr Ch. 5	**Bahr Ch. 5** **DI Lesson Video: Summer unit**
Th - May 29	Single-digit multiplication/division: Understanding the operations, problem types, and solution strategies Brief-form lesson plan format	Bahr Ch. 6	**Bahr Ch. 6** **Summer math units**
T - Jun 03	Multidigit multiplication/division: Multidigit problems RAMP fluency timing procedures	Bahr Ch. 7	**Bahr Ch. 7** **DI Brief form video: Summer unit**
Th - Jun 05	Fractional sense: Part-whole and part-set fractions	Bahr Ch. 10	**Bahr Ch. 10**
T - Jun 10	Cognitively-guided instructon for math	Bahr pp. 162-168, 192-197	**DI Brief lesson video: Fractional sense**
Th - Jun 12	Cognitively-guided		Attendance

TH - Jun 12	Cognitively-guided instruction	Attendance
		CGI video lesson: Summer unit
	Recording student RAMP scores	
	Wrap up, prep for final exam	

University Policies

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Sexual Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor or contact one of the following: the Title IX Coordinator at 801-422-2130; the Honor Code Office at 801-422-2847; the Equal Employment Office at 801-422-5895; or Ethics Point at http://www.ethicspoint.com, or 1-888-238-1062 (24-hours).

Student Disability

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

Academic Honesty

The first injunction of the Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. "President David O. McKay taught that character is the highest aim of education" (The Aims of a BYU Education, p.6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

Plagiarism

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor. Inadvertent plagiarism, which may not be a violation of the Honor Code, is nevertheless a form of intellectual carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education where all members of the university are expected to acknowledge the original intellectual work of others that is included in their own work. In some cases, plagiarism may also involve violations of copyright law. Intentional Plagiarism-Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another as one's own without providing proper attribution to the author through quotation, reference, or footnote. Inadvertent Plagiarism-Inadvertent plagiarism involves the inappropriate, but non-deliberate, use of another's words, ideas, or data without proper attribution. Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply not being sufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism is a form of academic misconduct for which an instructor can impose appropriate academic sanctions. Students who are in doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance. Examples of plagiarism include: Direct Plagiarism-The verbatim copying of an original source without acknowledging the source. Paraphrased Plagiarism-The paraphrasing, without acknowledgement, of ideas from another that the reader might mistake for the author's own. Plagiarism Mosaic-The borrowing of words, ideas, or data from an original source and blending this original material with one's own without acknowledging the source. Insufficient Acknowledgement-The partial or incomplete attribution of words, ideas, or data from an original source. Plagiarism may occur with respect to unpublished as well as published material. Copying another student's work and submitting it as one's own individual work without proper attribution is a serious form of plagiarism.