



Achieving the Dream

Opening the Gate to Math Success





How We Decided on the SI Strategy

As part of the Achieving the Dream process, the QEP Team:

- Reviewed:
 - Existing institutional data
 - Current practices and services
 - Best practices
 - Accreditation team recommendations
- Gathered input from:
 - Faculty, staff, and administrators
 - Students



How We Decided on the Supplemental Instruction Strategy

The data gathering, analysis, and review of current/best practices revealed the need for:

- Improvement in student preparation and success in math courses, especially Math 0322 (Intermediate Algebra) and Math 1314 (College Algebra)
- Additional class time



What We Learned...

It was expected that student learning outcomes, as validated by a review of the literature, should result in:

- Decreased withdrawals from course
- Increased numbers of satisfactory grades
- Statistically significant increases post-test scores
- Strengthened student retention



What we decided...

- The Math Focus would concentrate on “opening the gate” by implementing supplemental instruction in two Math 0322 classes and by requiring a math lab for one Math 1314 class.
- The pilot study would be limited to courses taught at the Beeville campus the first year.



What we did...

- In Math 0322, two hours of supplemental instruction were added to the current one hour lab.
- In Math 1314, a three hour math lab was required where previously none was required.
- Peer tutors were provided in both classes as well as instruction in time management and study skills and an orientation to CBC resources.



What's Happened So Far and What Happens Next?

- The AtD was integrated with the Quality Enhancement Plan required by SACS.
- Research design was created.
- Existing data was used to set goals.
- SI Instructors begin Professional Development
- The original control group was tested in the Spring 2005 for the pilot program.
- The pilot program was implemented in Fall 2005 and the QEP/AtD program was expanded to all Beeville in Spring 2006 and to Alice campus in Fall 2006.
- Continual improvement of Math advising and math tutor training.
- Continual adaptation and expansion as we gather more results.



Faculty Engagement Process

The Math Chairperson was involved in all phases of development and led discussions regarding particulars such as scheduling, teacher assignments, trainings, etc.

It was decided that SI would be adapted to meet CBC's unique needs and strengths.



Traditional Supplemental Instruction vs. CBC Supplemental Instruction

Traditional	CBC
Voluntary	Mandatory for Math 0322 (replaces 3 hours of Lab)
Peer tutors only	Peer tutor and SI instructor
Choice of tutoring session	Participation in class and is part of the class grade
Pros—students have a choice whether to participate	Pros—more people reaching out, learn how to study, more time to absorb the information
Cons—can't, won't, don't	Cons—why, confusion, too much time, zzzzz



Involved Planning

- Math faculty developed student learning outcomes and comprehensive syllabi for Math 0322 and Math 1314
- Math faculty developed 5-Column models integrating QEP and IE process
- Math faculty and counselor developed tutor training manual
- Evaluation of program, instructors, tutors is developed
- Math faculty develop and present Advising Workshop to entire college during in-service Aug. 2005, Jan. 2006, Aug. 2006, and Jan. 2007



Professional Development Requirements and Opportunities

- Supplemental Instruction Workshop-Aug. 2005
Dr. Kimble Wilcox-University of Missouri
- Student Success Through Technology-April 2005
- CAMT (Conference for the Advancement of Mathematics Teaching)-July 2005
- Best Practices in Developmental Education Workshop- Sept. 2005
Gladys Hines-University of Texas-El Paso
- CASP (College Academic Support Programs) October 2005-
College Station
- Evaluation of Math DE Program – Dr. Barbara Bonham – Math
Consultant for the National Center for DE – Nov. 14 -16, 2005
- MAA (Mathematical Association of America-Texas section) April 2006,
April 2007
- Kellogg Institute – 2006, 2007 Boone, NC Appalachian State
University
- CASP-Oct. 2006, Austin
- AMATYC-Nov. 2006, Cincinnati
- Dev. Math Roundtable-Fall 2006
- Regional CAMPT-TAMU-CC 2006,2007



Initial Implementation – Fall 2005

- Math faculty registered all students on Beeville campus in their math classes
- Students were placed randomly in QEP/AtD classes and control classes
- Pre-testing was completed in lab/SI during the first 10 days of classes.
- Counselors present:
 - Orientation Workshop - Sept. 9, 2005
 - Study Skills Workshop - Sept. 14, 2005
 - Time Management Workshop - Sept. 19, 2005
- Peer Motivational Speaker - Sept. 16, 2005



Implementation Expanded - Spring 2006

- QEP/AtD program expanded to all but one section of Math 0322 and Math 1314
- Counselor's workshops limited to one CBC Orientation
- Study skills and time management integrated into QEP/AtD class



Fall 2006

- QEP/AtD program expanded to all Math 0322 and 1314 classes on Beeville and Alice campus
- Data analyst determined that only post-testing was necessary to measure objectives/goals and that the control group was too small.
- Larger control group was built from existing data for the 4 years prior to the pilot program along with Spring 2005 COMPASS end-of-course testing scores.



Pros and Woes/Program Changes

- Change: Math 1314 evolved into an SI class.
- Woe: Need for tutor training to be more standardized and intensive.
- Change: Nationally recognized tutoring program will be adopted



Pros and Woes/Gathering Results

- Woe – Make sure your data analyst is involved in the research design – it will save headaches later.
- Pro – Use existing data whenever possible that was gathered prior to the program's implementation.
- Woe – Using same instructors for Control and Treatment groups will confound your results.
- Woe – Internet and night classes have a different type of student and should not be used for control groups.
- Pro/Woe – Get ready to expand your program quickly. When students see how well it works, they will want in the program.







Pros and Woes/Evaluator Recommendations

- More centralized approach to tutorial services
- Continue having instructors in the SI classes
- Integrate learning/study strategies in Math 0322 and Math 1314 courses and SI labs.
- Collect data on impact of SI on students
- Continue using different teaching methods.
- Investigate Classroom Assessment Techniques
- Monitor advising and placement
- Develop a systematic plan for formative and summative evaluation
- Validate math course placement policies
- Survey faculty and students on appropriate placement
- Analyze success and completion rates of students with TSI exemption status
- Implement a nationally recognized tutor certification program



Measurable Goals

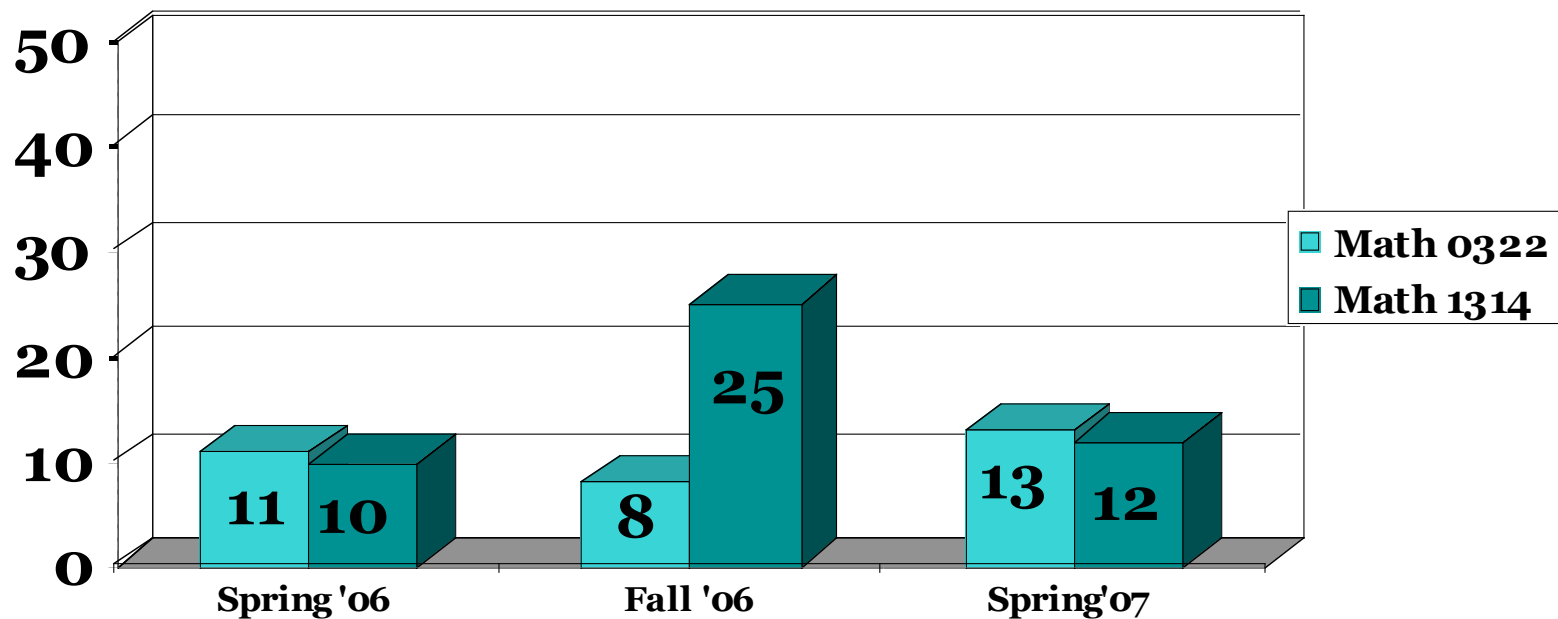
Learning Outcome Targets

-  QEP/AtD math students will score 10% higher on post-test than non-QEP/AtD math students.
-  60% of QEP/AtD math students will score at least 70% correct on the comprehensive final exam.
-  50% of QEP/AtD math students will score will be successful in the course (Final grade of at least "C").
-  75% of Math 0322 and 65% of Math 1314 QEP/AtD students will complete the course.

Results for Goal 1

QEP/AtD math students will score 10% higher on post-test than non-QEP/AtD math students.

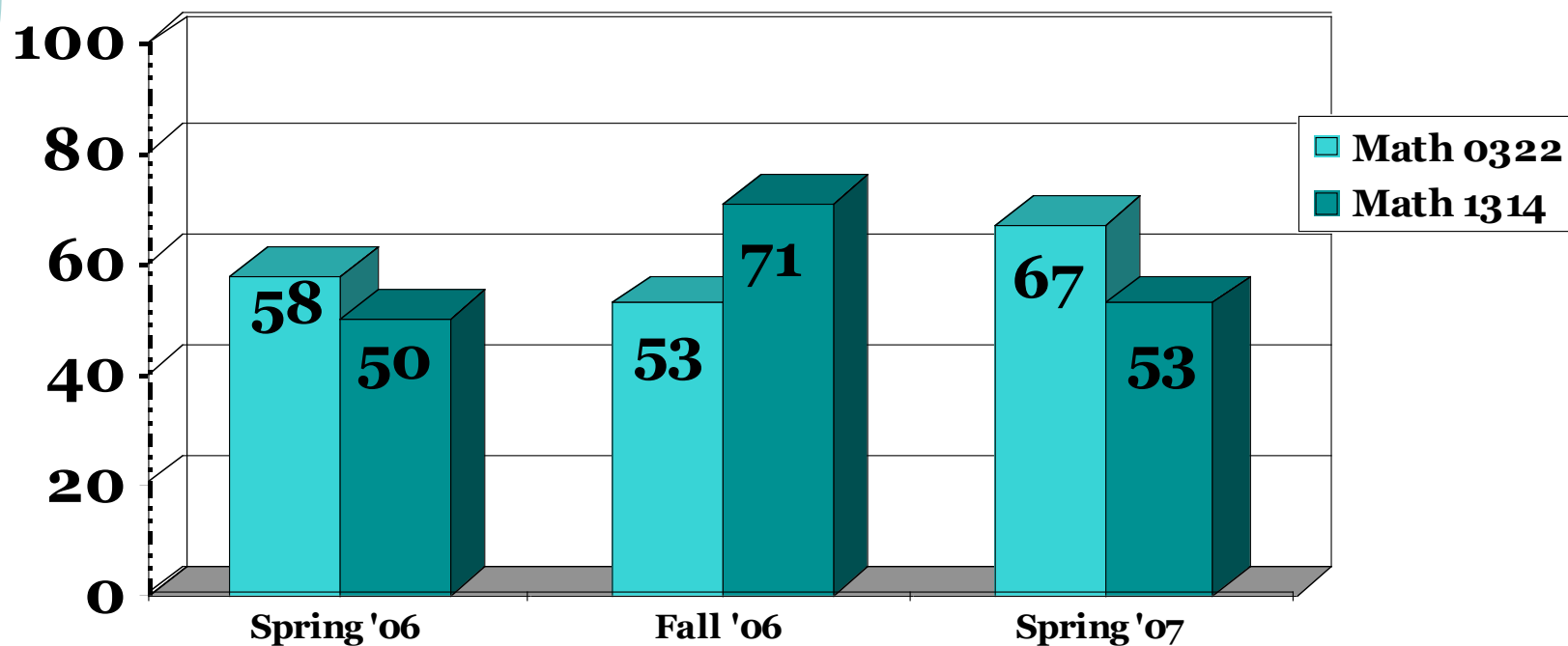
Percent Scoring Higher on Post-test than Control Group



Results for Goal 2

60% of QEP/AtD math students will score at least 70% correct on the comprehensive final exam.

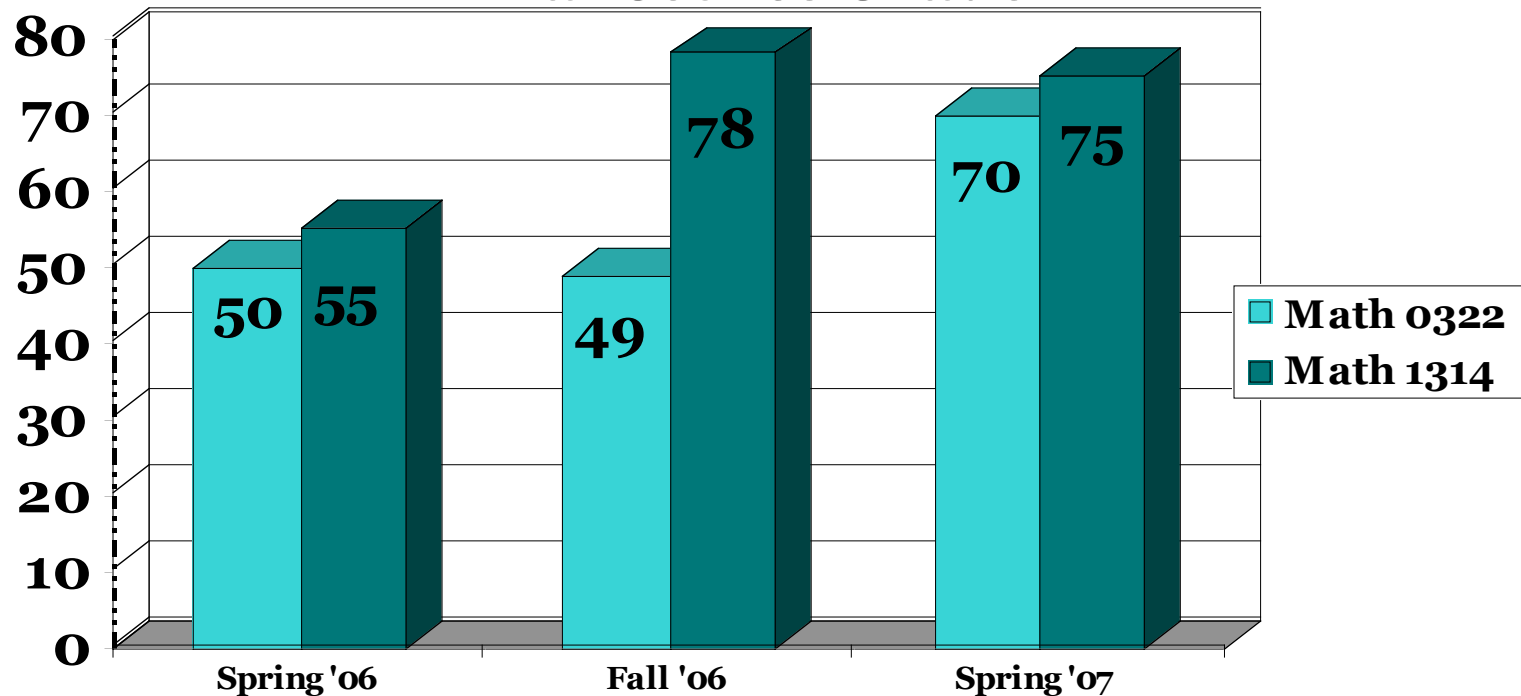
Percent scoring at least 70% on Final



Results for Goal 3

50% of QEP/AtD math students will score will be successful in the course (Final grade of at least "C").

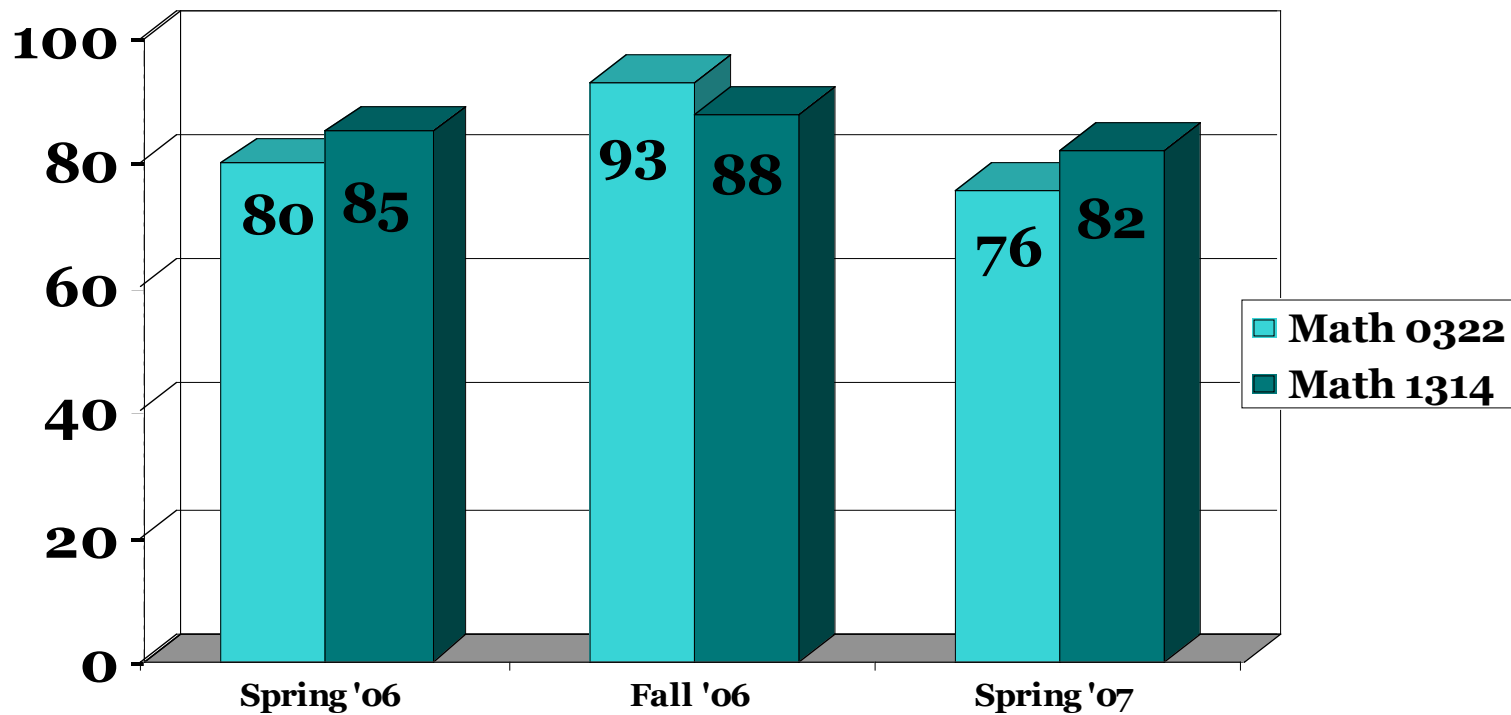
Percent Receiving "A", "B", or "C" as Final Course Grade



Results for Goal 4

75% of Math 0322 and 65% of Math 1314 QEP/AtD students will complete the course.

Percent of Students Completing Course





Remember....

Don't be discouraged if you don't get dramatic results immediately. This program involves institutional change and that happens over time. Implementing a program to help struggling students will help them

Achieve The Dream!



Questions?



Best Practice reviews included...

Supplemental Instruction/Video Supplemental Instruction Annotated Bibliography *Revised August 2003*

International Center for Supplemental Instruction
University of Missouri-Kansas City
Center for Academic Development
5014 Rockhill Road, SASS Building 210
Kansas City, MO 64110-2499
(816) 235-1174
(816) 235-5156 (FAX)
<http://www.umkc.edu/cad/si/>



Other Sources...

Strengthening Math Skills At The
Postsecondary Level:Literature Review
And Analysis Prepared for: U.S.
Department of Education, Office of
Vocational and Adult Education,
Division of Adult Education and
Literacy

Prepared by: The CNA Corporation
Contract ED-01-CO-0037



External Evaluator Credentials

Barbara S. Bonham, Ph.D.

- *Education: Ph. D. The Pennsylvania State University, PA, 1989*
- *Senior Researcher/Instructional Design & Evaluation Consultant (1989-Present) National Center for Developmental Education*
- *Numerous Publications and speaking engagements*