

An Evolution of Cooperation: Bolstering Mathematics Remediation with Targeted Supplemental Instruction Courses

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- The focus is on **improving the Mathematics Remediation Process** through departmental cooperation involving Institutional Research.
- Results from the latest technique, **Supplemental Instruction Courses** for Mathematics Remediation will be presented.

The Beginning (Fall 2005)

- First Remediation Submission.
- What Department and who can I get the data from? (Turnover problems).
- Cooperation?
- How do we format?
- What is an FTP?
- Success? (CO email)

Examining and Sharing the Results

Fall 2006

- Summarizing the Results
- [..\5-year Comparative RemedCohortSummary2.xls](#)
- Comparing Results with other CSUs
- Sharing the Results with Others
- Alignment with the Strategic Plan
 - 1.7 Provide academic and student services support for student retention, success and graduation
- **WASC, H.S.I.** (Cohorts, Hiring of First-Year Coordinator)

Examining the Process (Fall 2007)

- [..\2008Pres\AppendixE-MathRemediation.xls](#)
- A registration examination of Fall 2006 data by the Office of the First Year Academic Support Coordinator.
- Institutional Research tabulates the data and points out trends. (Registration problems).

Steps Taken for Fall 2007

- Goal: To raise awareness and eliminate registration confusion in the remediation process and to make students aware of the consequences of non-remediation.
- Checking which courses students are registered for.
- Communications Campaign: Mass emails and phone banking to contact students not registered *as well as those in the correct courses*.

Findings From the Communication and Awareness Campaign

- 115 Fall 2007 students in need of mathematics remediation were not enrolled or were not in the proper courses.
- Why? Some examples of student responses—
- It was too hard and/or confusing to register.
- I thought remediation was through the Community Colleges and if you were accepted here you were OK.
- I came from a good High School and know Math.
- What is the ELM?

The GEL 101 Course

(A key first-year course)

The Student, The University, The Community

Designed to equip students with the basic skills, concepts, and knowledge necessary to become a lifelong learner. Examination of current theory and research regarding the information age, health and wellness, career development, and psychological assessment. Practical application of the theory and research. **Includes information literacy and technology skills, group and teamwork, and learning styles.**

Prerequisite: Freshman standing or consent of instructor.

Students Taking the GEL 101 Course early in their careers are retained at a higher rate than those who do not.

- Action Taken- offering more GEL 101 sections.
- Both GEL 101 and Non-GEL 101 Students had similar High School GPAs.
- The course had higher retention rates for students not requiring remediation.
- Do the *motivated* students take this course?

Cohorts and Summer Programs

- **Summer Bridge:** EOP, SSS, MAPS
 - Summer Bridge is a six-week summer transition program for first-year students, providing instruction in writing, math, computer competency, library research, and college success skills. Students also participate in co-curricular activities that promote cultural awareness and their development as a community of learners.
- **Summer Academy:** Similar to Summer Bridge but open to all students wishing to get a jump start on remediation. Launched in 2007.

Fall 2008: Action Taken as a result of the Communications and Awareness Campaign

- ALL students in need of Pre-Algebra (Math 15) and Beginning Algebra (Math 50) and most in need of Intermediate Algebra (Math 51) were contacted, informed and registered.
- Students were also informed of remediation requirements in their GEL 101 course, part of the General Education- Life Long Learning and Information Literacy sequence.
- Registration practices were changed to enable students to pre-register for the next course in the sequence prior to the official receipt of the grade for their previous course.
- A plan for peer facilitated academic support (including compensation) involving instruction and mentoring is being developed. The estimated cost would be more than made up by the FTES conserved by losing non-retained students. (So we thought...)

Spring 2009: Supplemental Instruction

- Paired with the Math 51 remedial course.
- A one-unit “Self-selected” course- Math 22.
- Facilitated by a student leader (Math Major).
- Facilitators supervised by a Graduate student.
- Students discuss class problems and topics as a group and meet 1:1 with facilitators.
- Cost: Approximately \$6,000 for 4 sections.

Specialized Instruction Program Analysis

Demographics

- **HSGPA:** SI Students 2.99 ₍₁₂₉₎ vs. 2.96 for Non-SI Students ₍₉₃₎
- **SAT total score:** SI Students 858 ₍₁₁₅₎ vs. 870 for Non-SI Students ₍₈₃₎
- No significant differences in **Gender** or **Ethnicity**

Specialized Instruction Program Analysis

Math 51 Grades

- How were the Math 51 grades for the SI students compared to the non-SI students?
- [MATH2251SP09.xls](#)
- SI Student Grades in Math 51 Statistically Significantly *Lower...*

Specialized Instruction Program Analysis

Continuation

- 111 of 129 SI students were still enrolled in Fall 2009 (86.0%) vs.
- 69 of 93 Non-SI students still enrolled in Fall 2009 (74.2%)
- Overall rate 74.3% for *all* Freshmen

Specialized Instruction Program Analysis: Remediation

	Completed Remediation?				
SI Students	NO	%	YES	%	TOTAL
Both	12	13.6%	76	86.4%	88
English	0	0.0%	5	100.0%	5
Mathematics	2	6.9%	27	93.1%	29
TOTAL	14	11.5%	108	88.5%	122
	Completed Remediation?				
Non SI Students	NO	%	YES	%	TOTAL
Both	14	24.1%	44	75.9%	58
English	0	0.0%	1	100.0%	1
Mathematics	4	14.3%	24	85.7%	28
TOTAL	18	20.7%	69	79.3%	87

Did Specialized Instruction Help?

Remediation and Continuation Rates

	Mathematics		Both		Overall		Freshman Continuation Rate
Fall Terms	<u>Percent Remediated</u>		<u>Percent Remediated</u>		<u>Percent Remediated</u>		<u>Percent</u>
2008-09	142/178 = 79.8%		331/435= 76.1%		800/995 = 80.4%		74.4%
2007-08	142/181 = 78.5%		310/444= 69.8%		665/880= 75.6%		70.4%
2006-07	135/213= 63.4%		240/425= 56.5%		598/ 887 = 67.4%		70.1%
2005-06	75/103 = 72.8%		147/232= 63.4%		342/470= 72.8%		75.7%

Specialized Instruction Program Analysis:

Overall Results

- SI Students have lower Math 51 Grades.
- SI Students are retained at a higher rate.
- SI Students remediate at a higher rate.
- Why?

Support network helps students pass?

Students helped each other.

Helps alleviate Mathematics anxiety?

Is the SI Program worth the Cost?

- The Continuation and Remediation Rate is about 10% higher.
- Do these increased rates support the cost?
- For each 100 students, it may retain 10 extra...
- Now more focus on specific issues and close departmental cooperation.
- Other factors?-two, four year rates next.
- Discussion of other programs to help.

The Unremediatable.....

