

Improving Math Pass Rates: Supplemental Instruction

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Longitudinal Study

Beginning Algebra is a foundations (i.e. developmental, remedial or college preparatory) course. Placement is by scoring less than 63 on Accuplacer or an equivalent.

Table 1. *Beginning Algebra with Fall Enrollment and Pass Rates*

Year	Enrollment	Pass Rate	SI Pass Rate
1998	924	39%	
1999	926	43%	
2000	805	46%	37/70=53%
2001	931	42%	13/30=43%
2002	995	45%	54/92=59%
2003	989	43%	39/104=38%
2004	855	41%	52/90=58%*
2005	952	35%	33/98=34%
2006	N/A	39%	
2007	N/A	41%	
2008	608	43%	
2009	N/A	N/A	
2010	N/A	___/36= ___%	

* Includes one section with 23/30=77% passing.

Intervention Strategies

- **Attendance Policy:** After consulting with faculty, the department instituted a mandatory attendance policy. Students are now aware that missing more than six class hours will result in an F.
- **Group Work and Lab Sheets:** Originally, sets of problems were designed to supplement each textbook section, but the new text book publisher supplies a workbook. Instructors may also design additional worksheets for classroom use.
- **Supplemental Instruction:** As part of the Learners Community, Supplemental Instruction was incorporated into Beginning Algebra along with many other courses with high failure rates. When the Title V grant expired, Supplemental Instruction was the major intervention the university continued to fund due to its statistically significant effect with pass rates higher by 10%. For mathematics, the current Supplemental Instruction program focuses on Math 1301 College Algebra.
- **Textbook:** A new textbook with online homework, online videos and tutorial assistance was adopted.
- **Linked Course:** Math 1201 provides structured tutorial assistance designed for developmental students. Peer tutoring is provided under the supervision of a math instructor. Activities are structured around the corresponding developmental course homework along with group, or laboratory, activities. Additional topics may include study skills, time management, goal setting, and test-taking skills.
- **Final Exam:** Students were allowed to take an early Online Final Exam during the Reading Period. If not successful in passing the course, the student took the regular Final Exam. This has been discontinued for Beginning Algebra due to lack of significant student preparation and success. This intervention has proven sufficiently successful to continue for College Algebra.

Fall 2010 Comparisons

Figure 1. *Beginning Algebra*

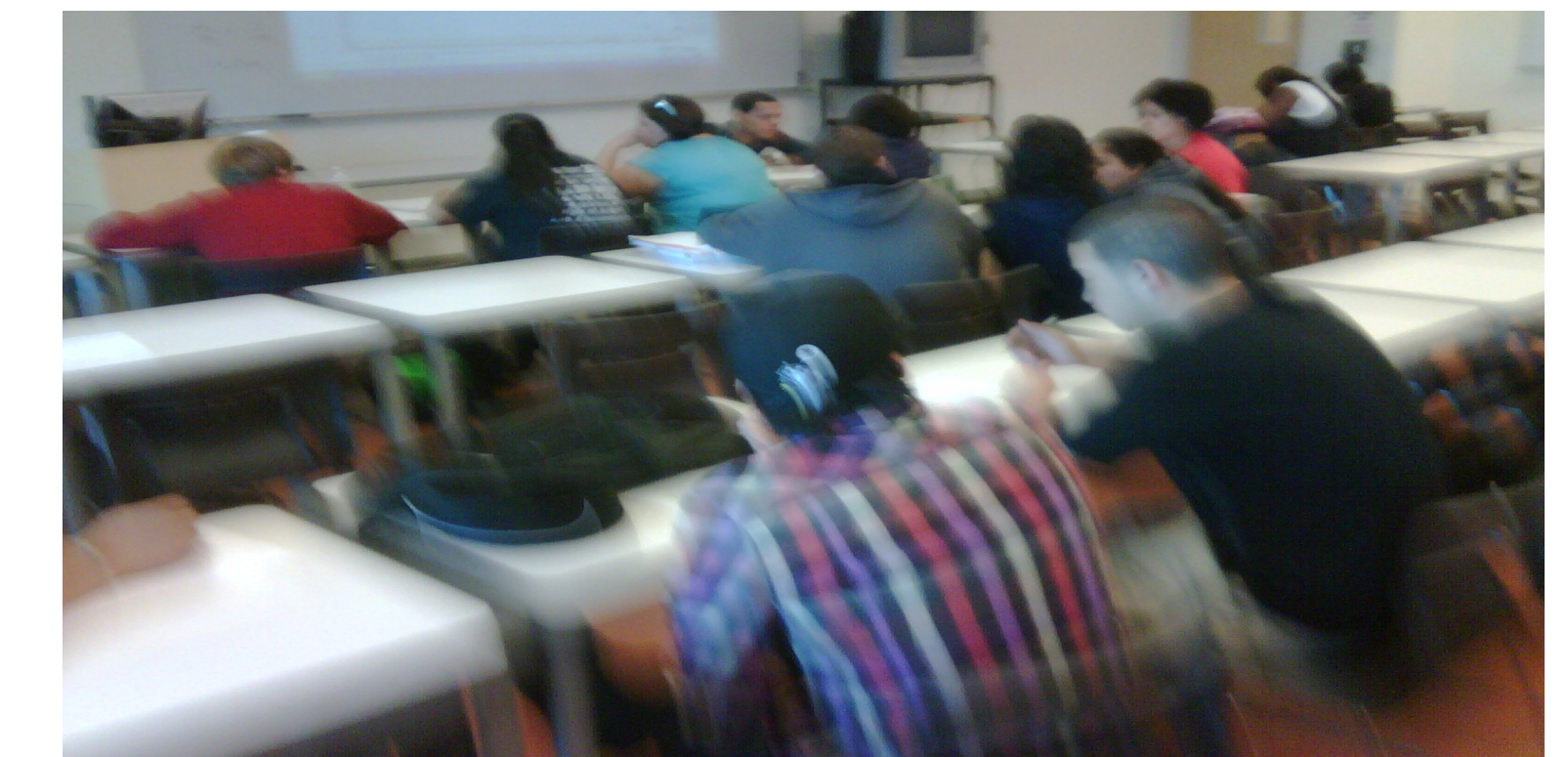


Table 2. *Comparison of Averages With and Without Supplemental Instruction (SI) for Two Sections in Fall 2010*

	No SI	With New SI
Test I	75	77
Test II	57	64
Test III	47	51
Homework	50	54
Class Work	55	53
Current Average	59	64

(as of November 9, 2010)

Figure 2. *Beginning Algebra With SI*



Conclusions: Of all the variables tested, the only statistically significant strategy was Supplemental Instruction. There is some anecdotal evidence that the more training an SI Leader has and the longer the partnership between the SI Leader and faculty member, the greater the pass rate for the course.