

*Supplemental Instruction (SI) as a
Strategy for Success in Math
Courses*

Achieving the Dream Strategy Institute

Jan 21 – 23, 2007

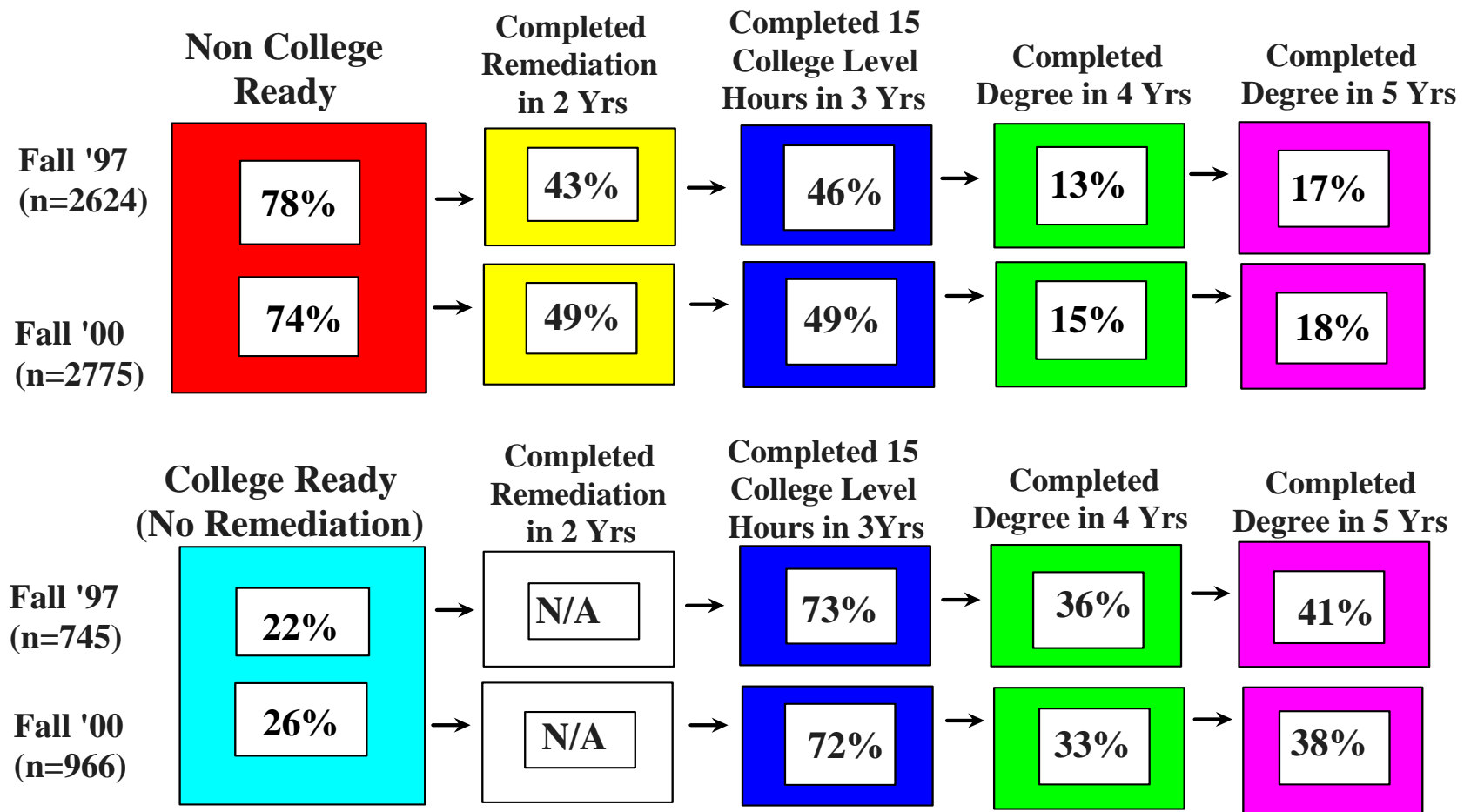
Gaps Identified by Valencia for AtD



- Gap 1.** Between under prepared and college-ready students
 - Gap 2.** Between ethnic groups
 - Gap 3.** Between math course success rates and success rates in other disciplines
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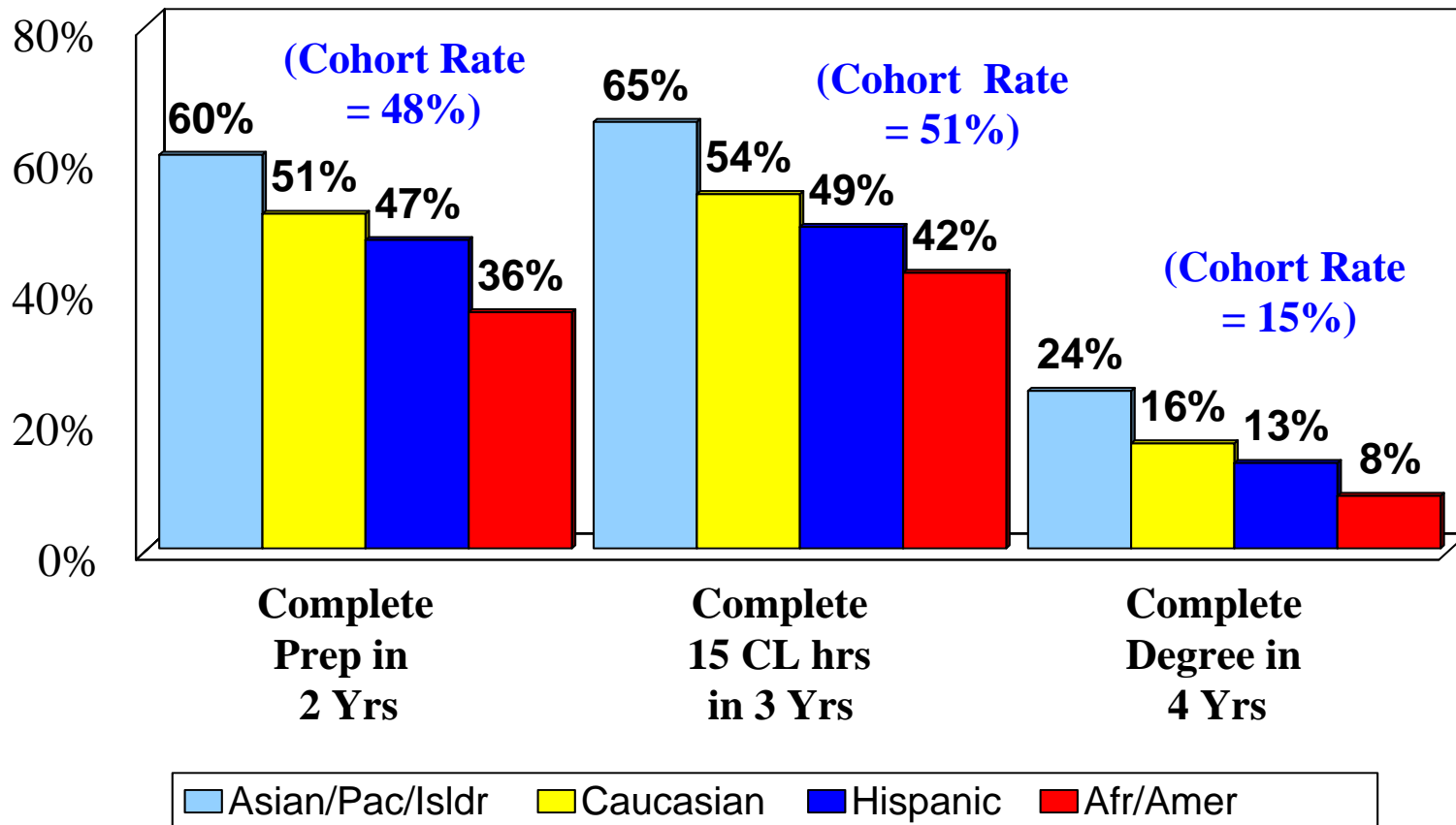
Gap 1: Progression and completion rates are lower for under prepared students

FTIC Student Progression - Fall 1997 vs Fall 2000



Gap 2: Hispanics and African Americans fall below other groups; Asians lead

Progression Rates by Ethnicity
FTIC Under Prepared Students - Fall 2000



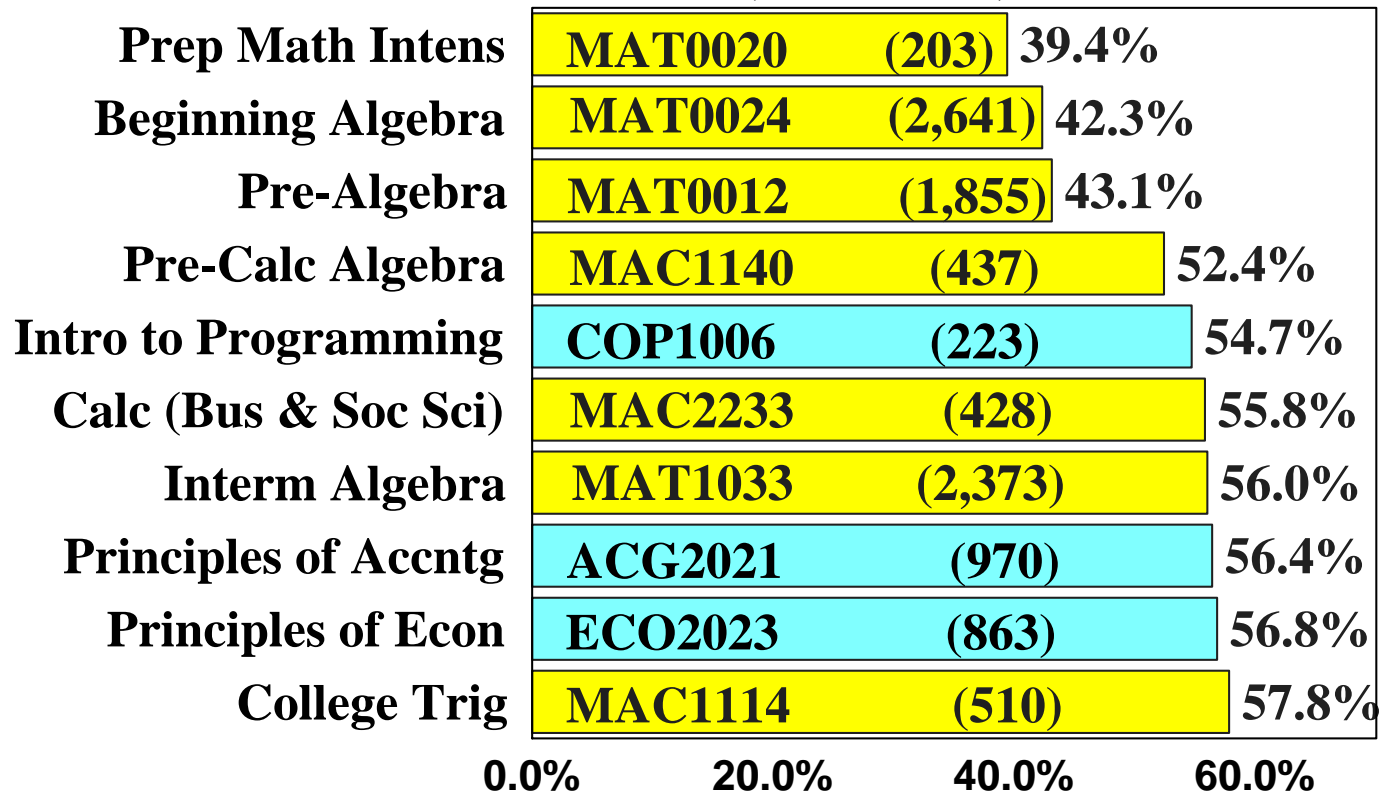
Gap 3: 10 lowest success rates show students' struggle most with math

Courses with 10 Lowest Success Rates

All Students - Fall 2004

(Success = Grade of A, B, or C)

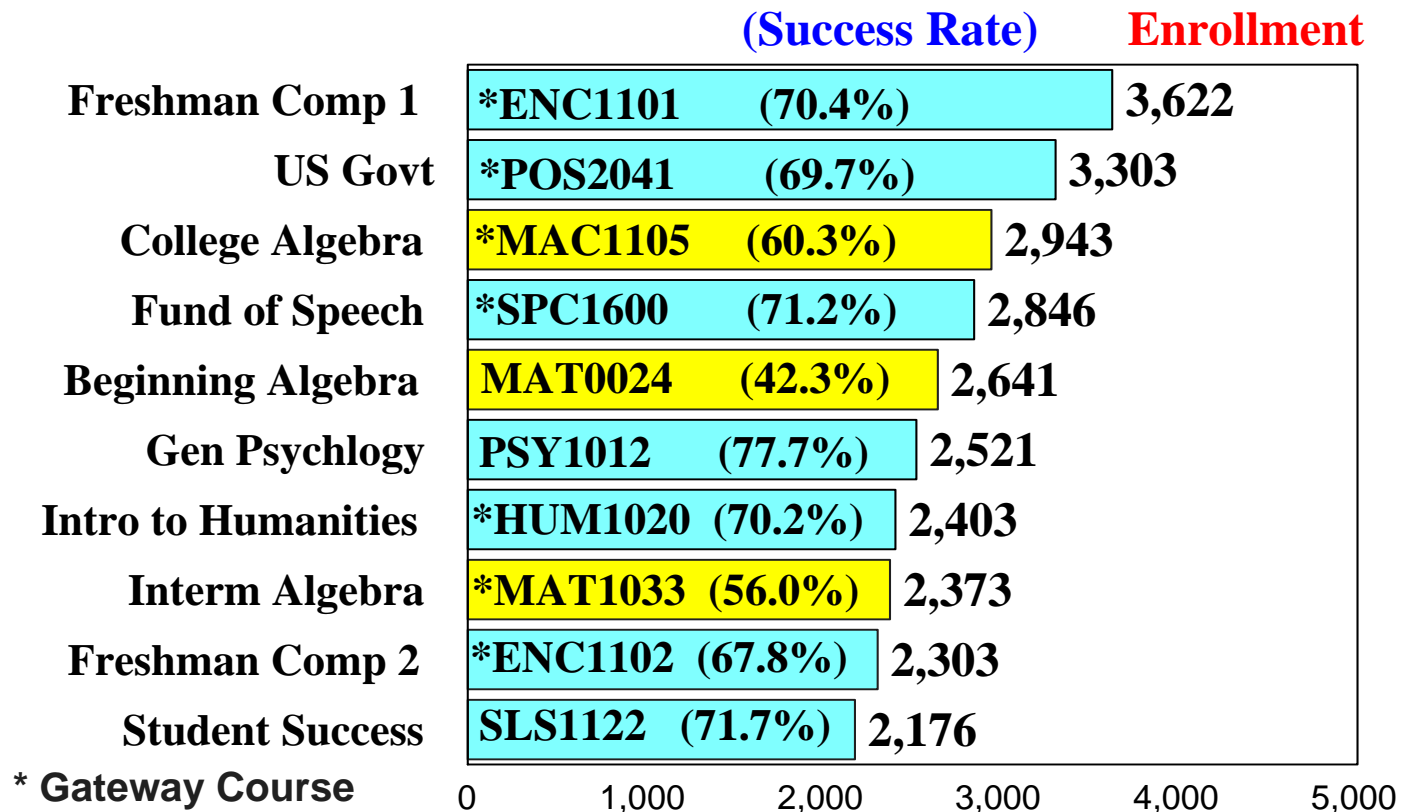
(Enrollment) Success Rate



(Courses = 10,503 enrollments or 12% of Fall enrollment))

Gap 3: Math has high enrollment and low success rates

Courses with 10 Highest Enrollments
All Students - Fall 2004
(Success = A, B, or C)



(Courses = 27,131 enrollments, 31% of Fall (87k) enrollment.)

Targeted Courses



Developmental

- Pre-Algebra
- Beginning Algebra
- Intermediate Algebra

Gateway

- College Algebra
 - Freshman Comp I
 - U.S. Government
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Strategy Selection Process - Planning Yr



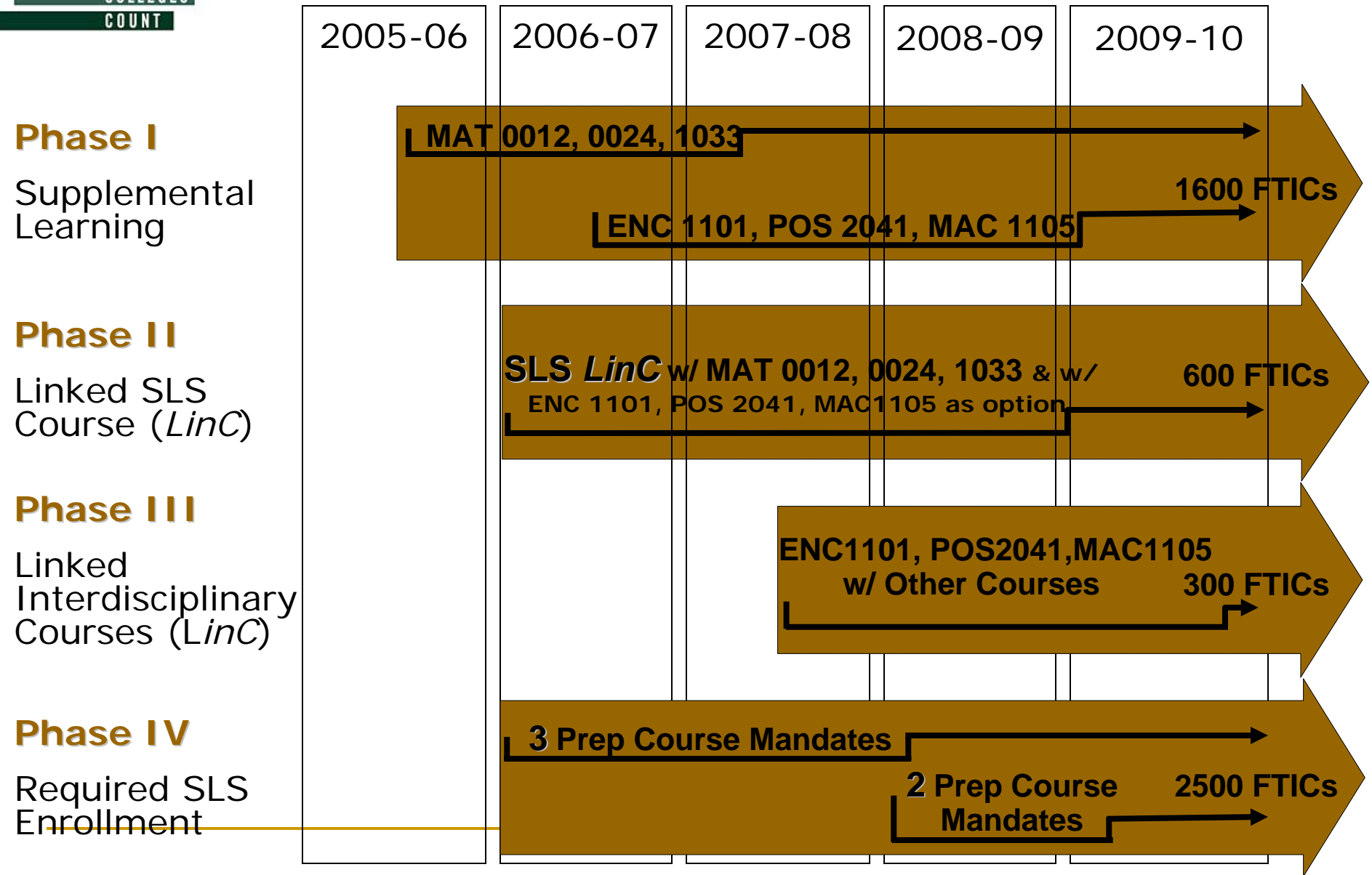
- **Achieving the Dream Leadership Meeting**
 - Key leaders from all areas attended
 - FTIC cohort data presented & discussed
 - Inventory of existing VCC learning strategies reviewed
 - Work groups trimmed strategies to short list & assessed effectiveness, ripeness, & scalability
- **Core Team Meeting**
 - Strategies categorized into 3 areas: Learning Communities, Supplemental Instruction/Learning, and Other (student success, mentoring, & misc. others)
 - Four measures adopted for AtD Initiative:
 - Increase % completing math & competency in math
 - Increase % completing all developmental courses
 - Increase % reaching points post developmental work
 - Increase % graduating

Strategy Selection Process-(conti)



- **Strategy Teams**
 - Conducted research; collected data; evaluated ripeness, effectiveness, and scalability; produced 3 written reports with recommendations
 - Strong faculty involvement
 - **Big Meeting 1**
 - Broad attendance, quantitative & qualitative (focus + groups) results shared, strategy team reports shared
 - Work groups reviewed data, strategies, four AtD measures & voted on top 2 or 3 strategies
 - **Core Team Meeting**
 - Big Meeting 1 results reviewed & discussed
 - Three strategies selected for Initiative using data, 4 measures, & Big Meeting 1 recommendations
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Strategy Four Year Implementation Timeline



Supplemental Learning College-wide Development Process – Term Before Implementation



- Math Summit
- VCC SI Model – based on University of Missouri, Kansas City
- Go to Mathematics department meetings and discuss the philosophy behind SI and identify interested full-time faculty.
- Identify a campus leader on each campus.
- Organize an information session about SI for adjunct professors.
- Create a college-wide coordinating team to discuss implementation and training.
- Discuss campus plans with college-wide group.
- Establish a college-wide training program for SL leaders and SL professors.

Continuing the “Culture of Inquiry”

Quick Overview of Initial SL Implementation



- 407 FTIC Students in 34 sections of SL math; 900+ total enrollments in SL.
 - Students were unaware at registration that their math course was an SL section.
 - FTIC SL-Cohort = 44.2% Caucasian, 23.6 Hispanic, 20.6 African American, 2.5% Asian, and 9.1% Other.
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Faculty Development During Implementation Term



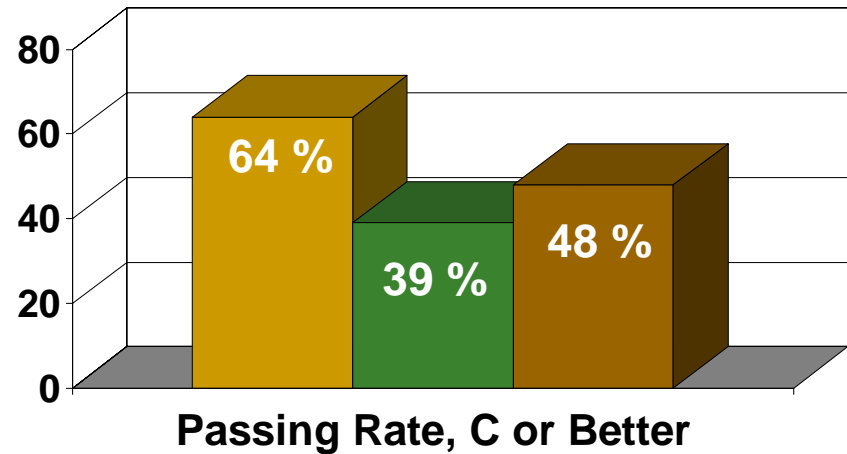
- Use a college-wide Supplemental Learning (SL) Leader Trainer
 - Use a college-wide SL Professor Trainer
 - Send campus coordinators, mathematics faculty, college-wide coordinator, SL data collector and AtD project director to Kansas City SI training
 - SL Coordinating Team (consisting of the 9 above and additional mathematics faculty and SL Leaders) redesign trainings and data collection procedures
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Supplemental Learning

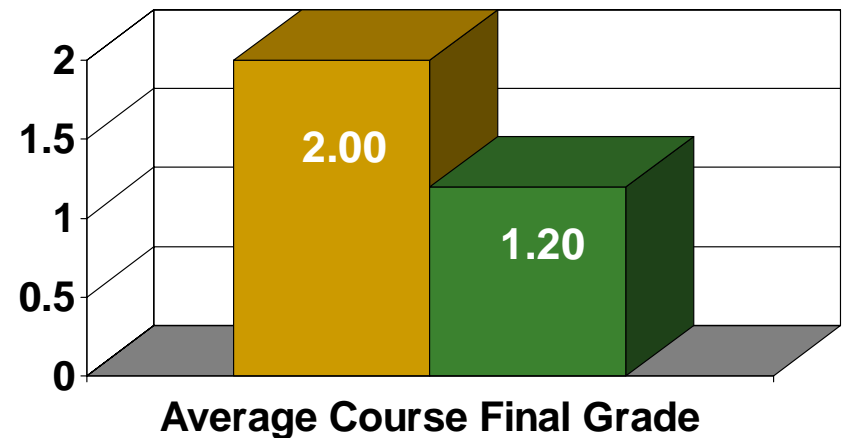
Findings, Spring 2006



SL-Prep Math course enrollees who attend at least one SL session show higher success rates.



■ Attended ■ Never Attended ■ College Baseline



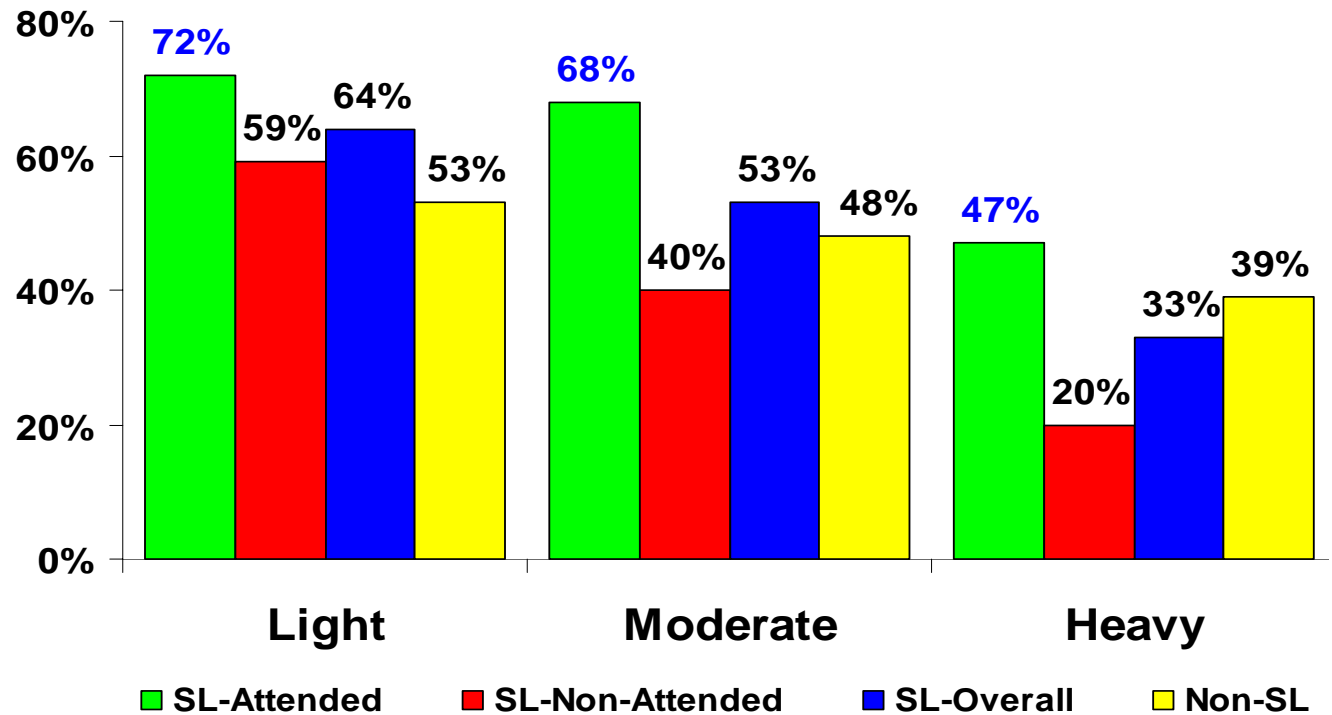
(Includes both FTIC and Non FTIC students)

Note: 47% of the sample population opted to attend at least one SL session. Population in SL Math courses equals 862 students..

Supplemental Learning: Findings, Spring 2006

FTIC Math students attending at least one SL session show higher success rates at *every* remediation level

FTIC Students with a Grade of C or Better in Lower Level Math* by Mandate Level

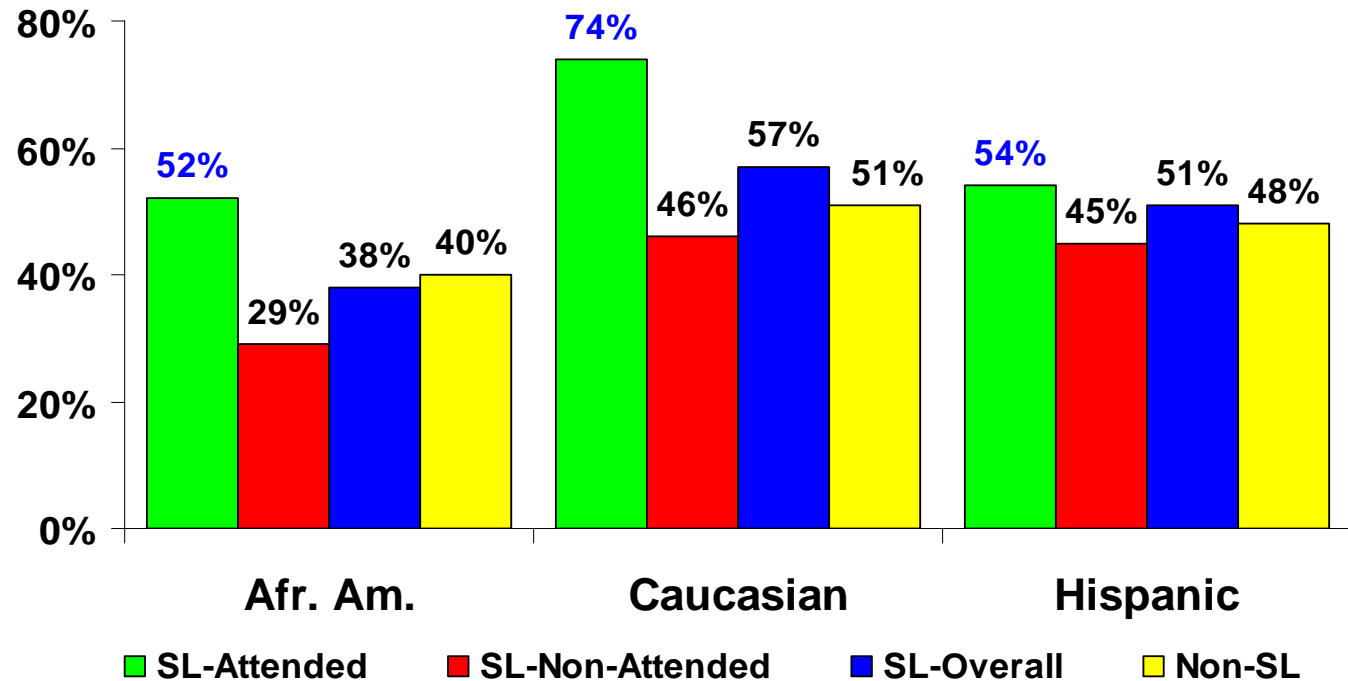


*Courses: Math 0012, 0024 and 1033

Supplemental Learning: Findings, Spring 2006

FTIC Math students attending at least one SL session show higher success rates in *every* ethnic group

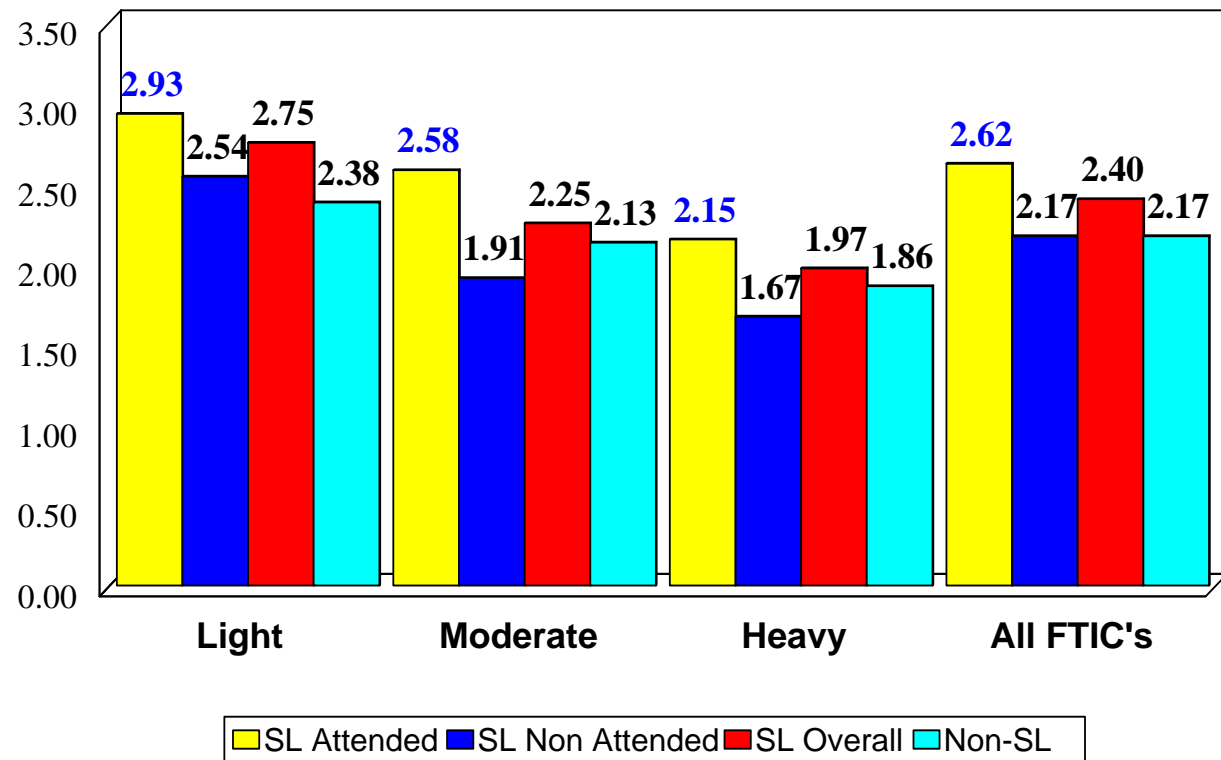
FTIC Students with a Grade of C or Better in Lower Level Math by Ethnicity



Supplemental Learning: Findings, Spring 2006

FTIC Average GPA's in Lower Level Math Courses
by Mandate Level
Spring, 2006

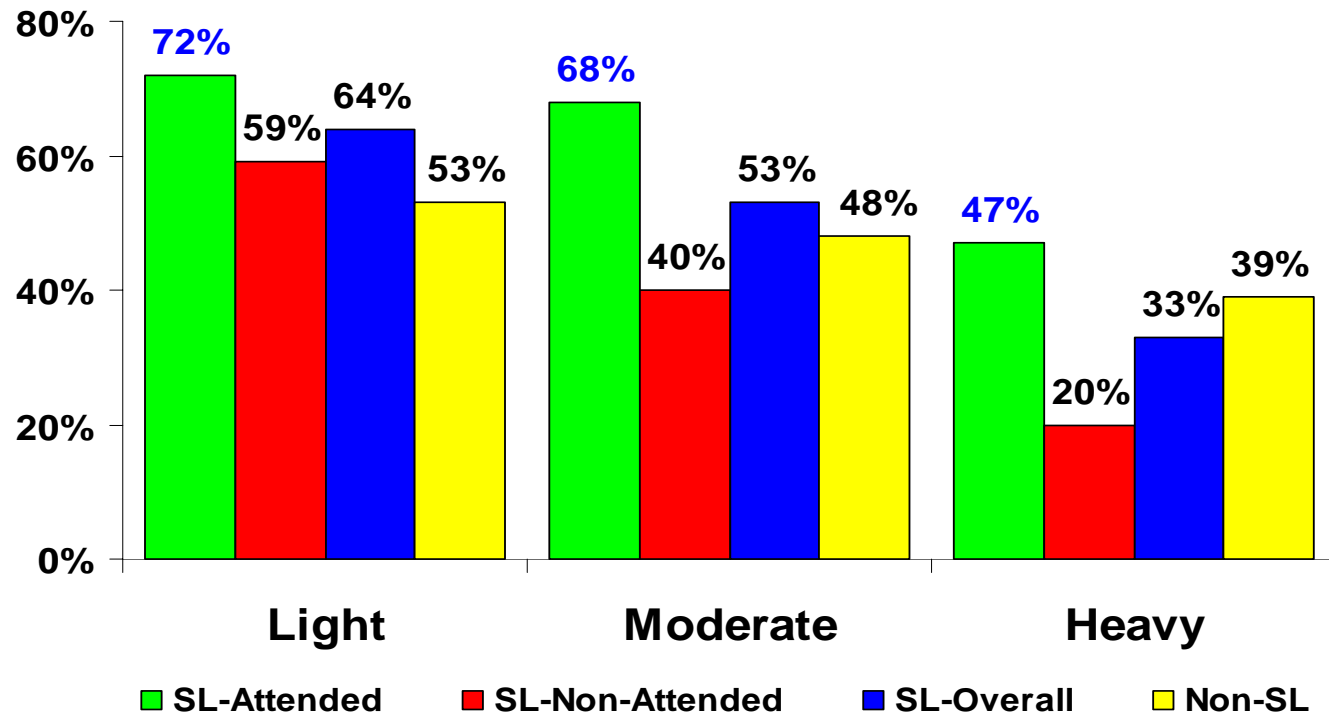
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Supplemental Learning: Findings, Spring 2006

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Focus Group Methodology



All groups are subgroups of the 926 students enrolled in SL

- 90 min. session – 25 and older
- 90 min. session – have attended SL sessions.
- 90 min. session – have not attended SL session.
- 60 min. session – “3-prep” students

SL Challenges (students)



- Session times were not convenient.
 - Students did not need the help because they were doing well in class.
 - Perceived SL to be a waste of time or “something extra” to do.
 - Uncertain about what the session would be like.
 - “Preferred one-on-one instead of group.”
 - “SL leader did not have all the answers.”
 - “SL leader gave incorrect answers or information.”
 - “SL leader lacked commitment and did not take an active role.”
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SL Successes (students)



- Extra help with questions.
 - More in-depth study/review of information.
 - Liked individual attention.
 - Sessions were convenient.
 - Different style offered from classroom instructor.
 - Less intimidating atmosphere.
 - SL understood the pressure of being a student.
 - SL sat through the class with them.
 - Sessions were “fun” and “upbeat”.
 - Sessions were optional.
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SL Challenges (faculty/staff)



- Attendance data collection not uniform
- Attendance data collection labor intensive
- Campus coordinator job (time-consuming)
- Some SL leaders were not “trainable”
- Some faculty were not supporting the program in-class
- Finding SL leaders

SL Successes (faculty/staff)



- Students who go need the help.
- Some SL leaders wants to teach mathematics in the future!
- SL leaders are learning leadership skills to use in life
- East campus attendance data showed the more the student attended SL sessions the better they performed in the course (linear regression, $r = .96$)
- Mathematics professors were asking to have SL leaders the next term and recommending SL leaders.

How Did We Share the Data Within Our College?



- Core Team Meeting, June 1
 - Data Team Meeting, June 2
 - Faculty Assembly, August 23
 - SL Coordinating Team Meeting, Sept. 23
 - SL campus coordinators with mathematics departments during Fall term.
 - AtD Project Director with Communications Departments and Social Science Departments
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- **Julie Phelps**, *Achieving the Dream Project Director and Professor of Mathematics*

407-582-2527; JPhelps@valenciacc.edu

ATD web site: <http://www.valenciacc.edu/dream/>

- **Rhonda Glover**, *Assistant Vice President, Institutional Research and Learning Assessment*

407-582-1376; RGlover@valenciacc.edu

IR web site: <http://valenciacc.edu/ir/>
