

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

*Achieving the Dream Strategy Institute*

*Jan 21 – 23, 2007*

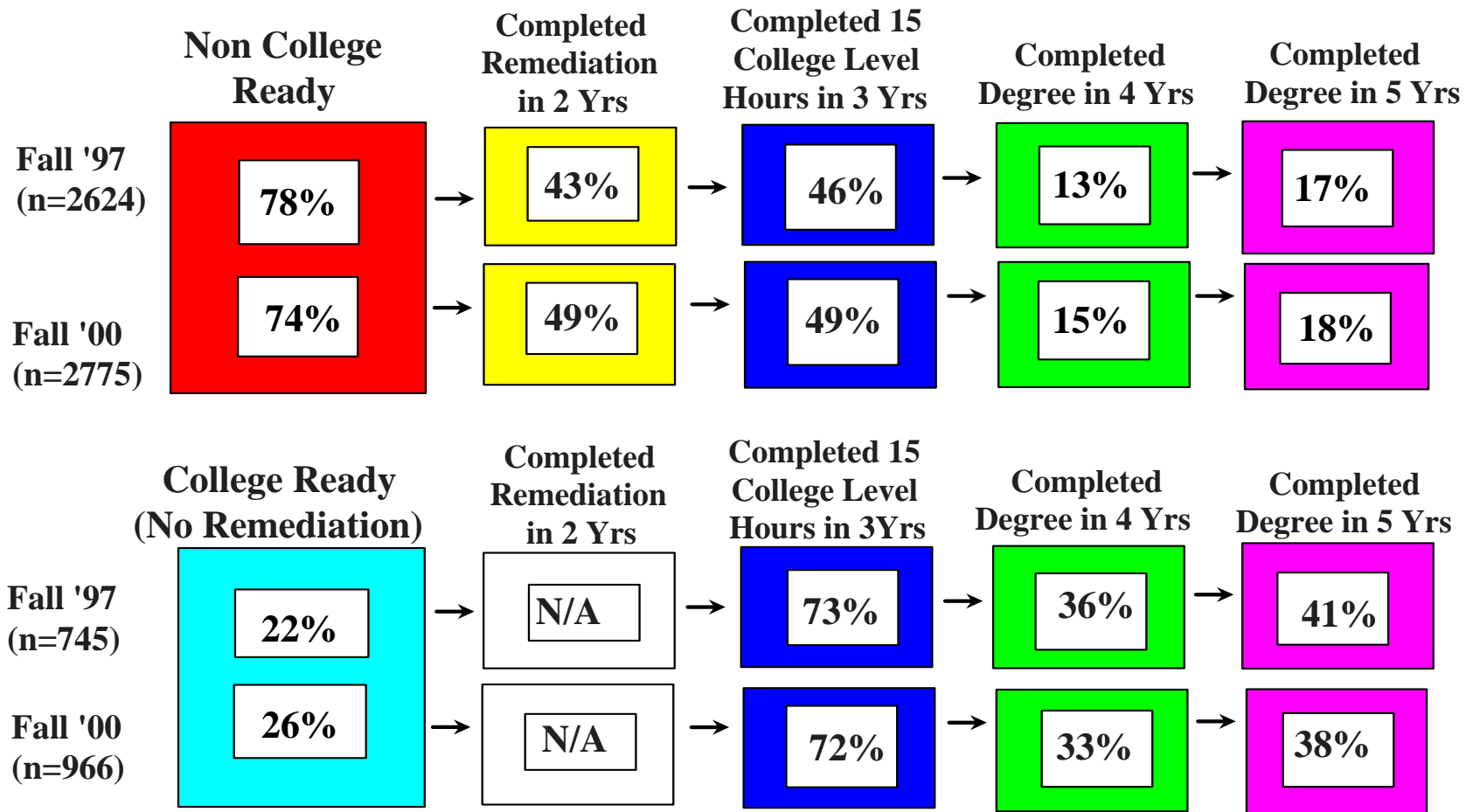
# Gaps Identified by Valencia for AtD



- 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**

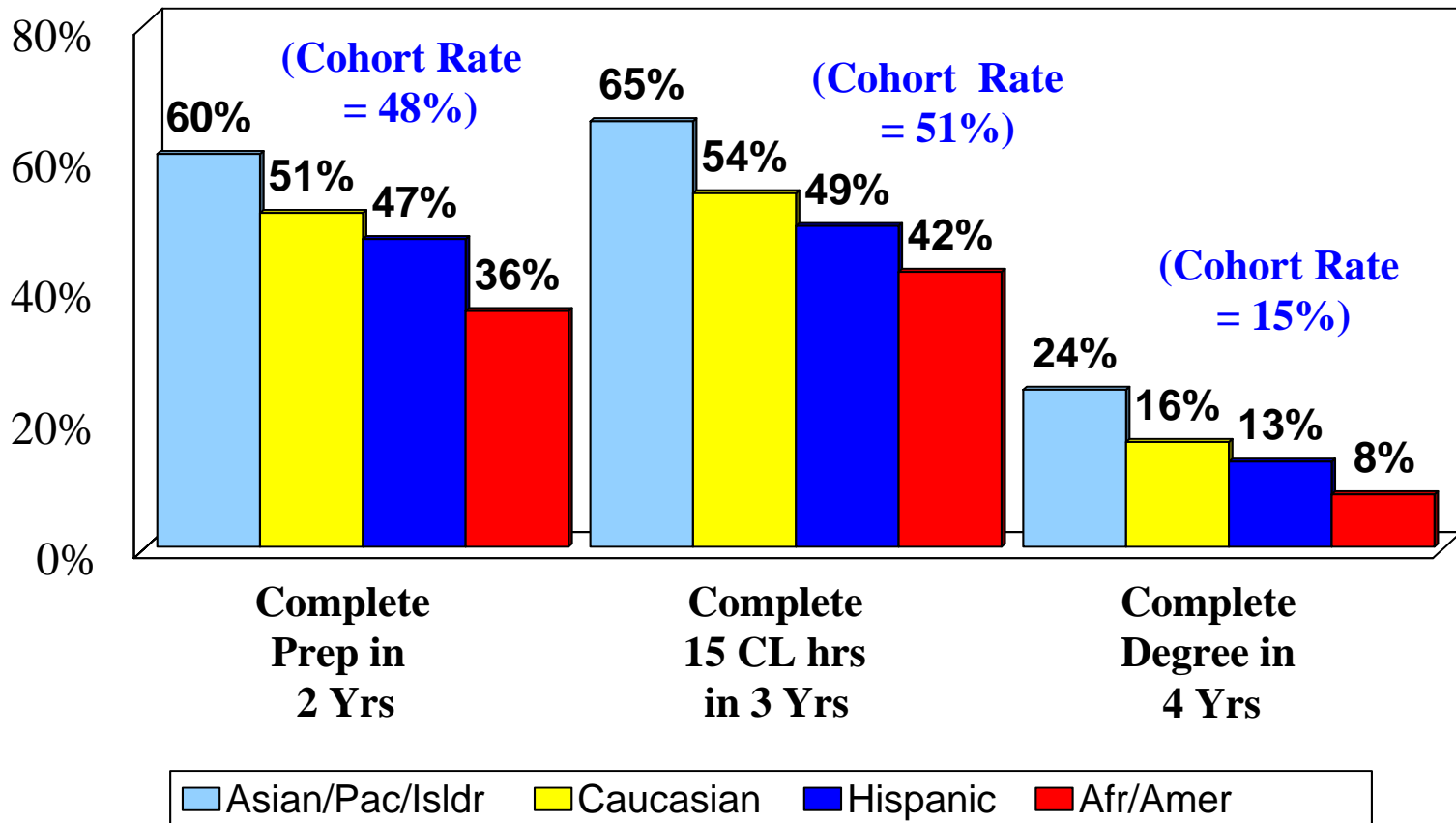
# Gap 1: Progression and completion rates are lower for under prepared students

## FTIC Student Progression - Fall 1997 vs Fall 2000



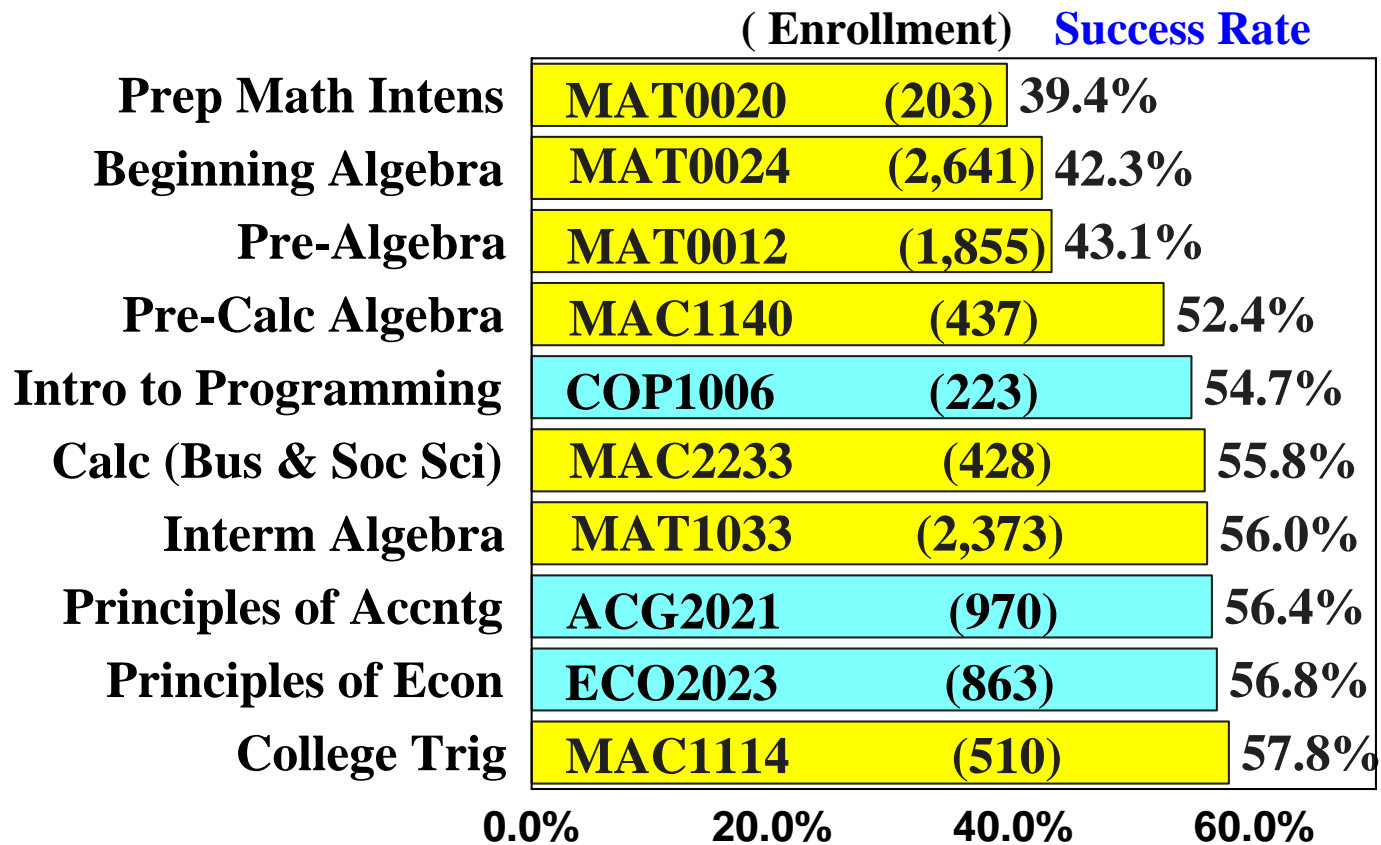
# Gap 2: Hispanics and African Americans fall below other groups; Asians lead

Progression Rates by Ethnicity  
FTIC Under Prepared Students - Fall 2000



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

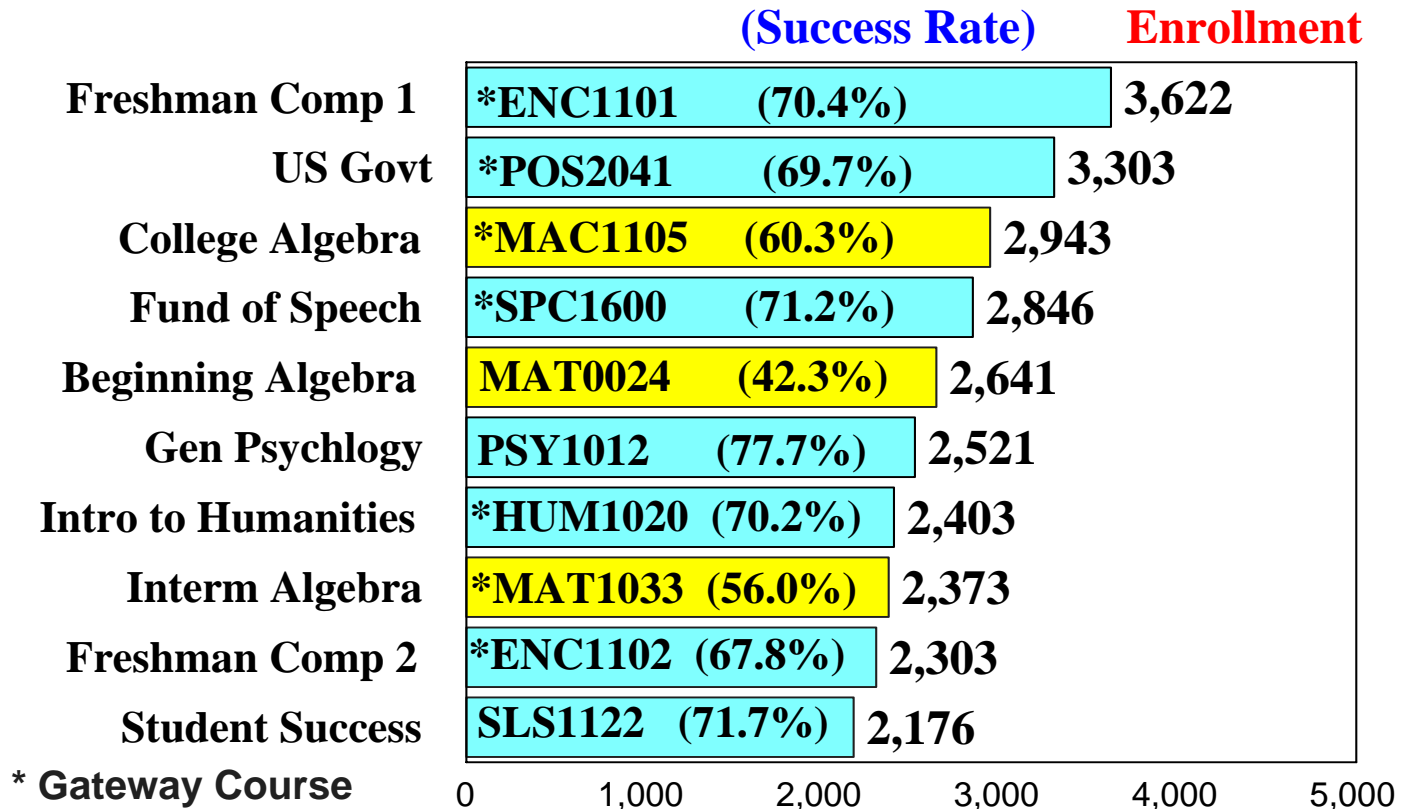
Courses with 10 Lowest Success Rates  
All Students - Fall 2004  
(Success = Grade of A, B, or C)



(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

# 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
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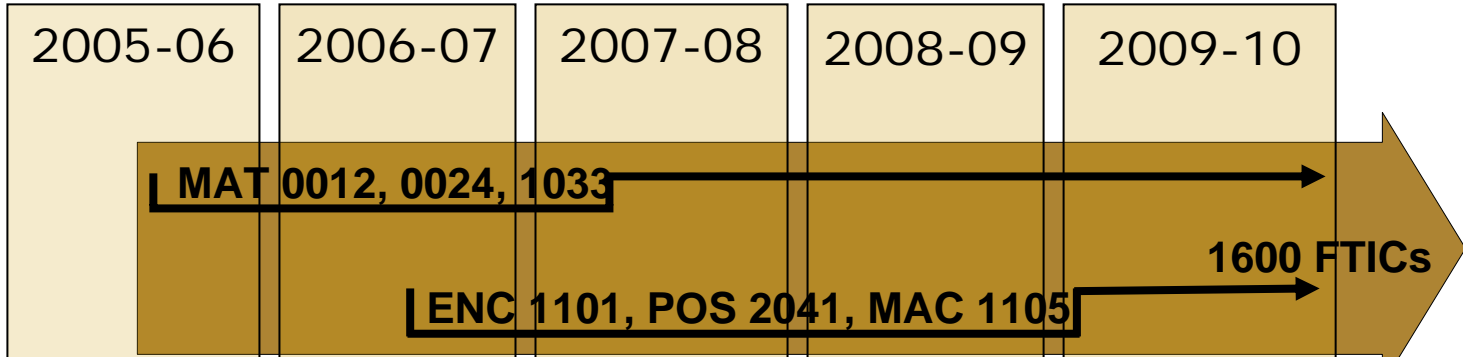
# Strategy Selection Process-(conti)

- **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

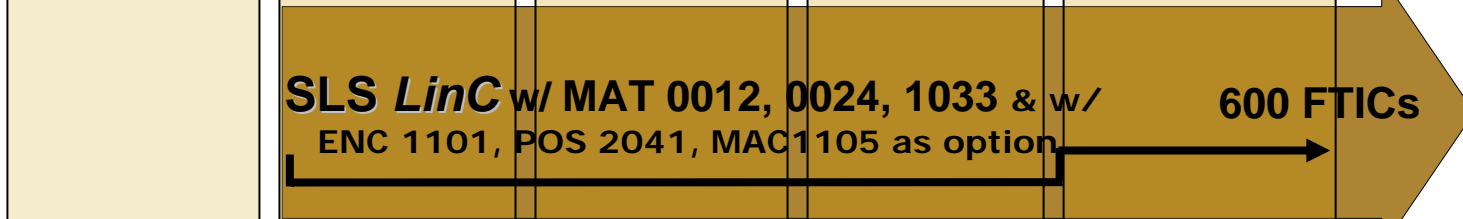
## Phase I

Supplemental Learning



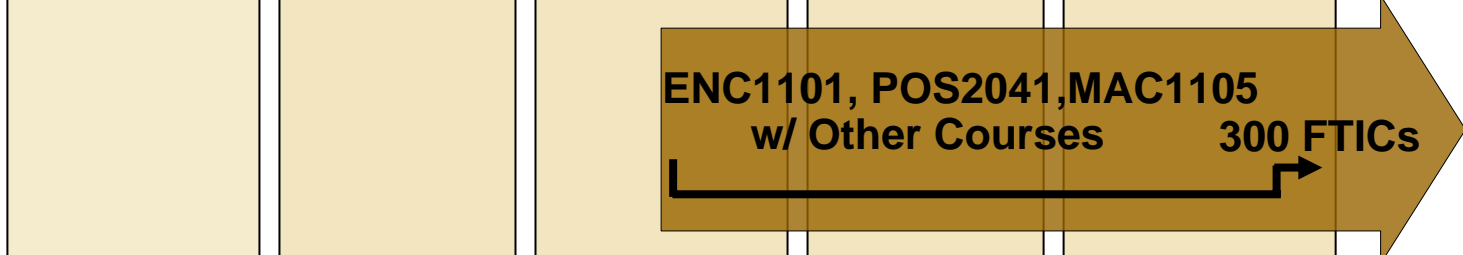
## Phase II

Linked SLS Course (*LinC*)



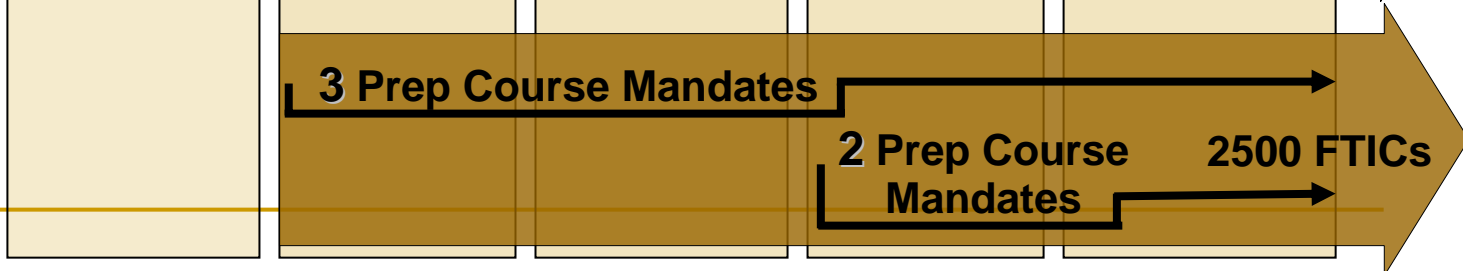
## Phase III

Linked Interdisciplinary Courses (*LinC*)



## Phase IV

Required SLS Enrollment



# 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.

# Faculty Development During Implementation Term

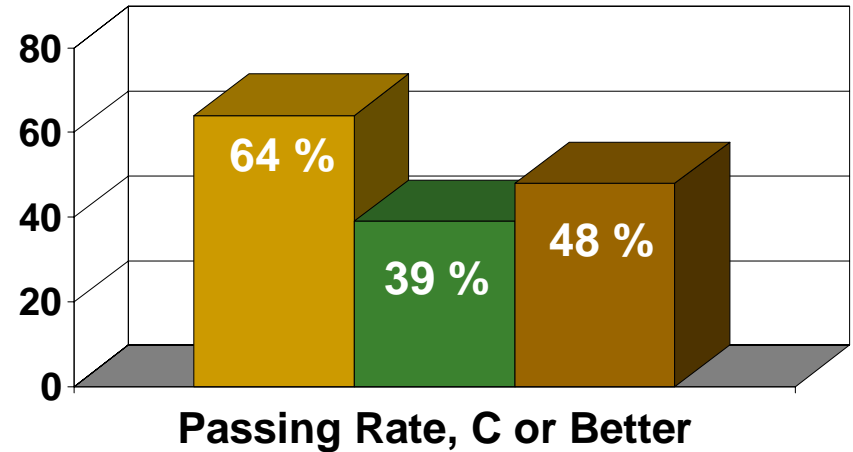


- Use a college-wide Supplemental Learning (SL) Leader Trainer
- Use a college-wide SL Professor Trainer
- Send campus coordinators, mathematics faculty, college-wide coordinator, SL data collector and AtD project director to Kansas City SI training
- SL Coordinating Team (consisting of the 9 above and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

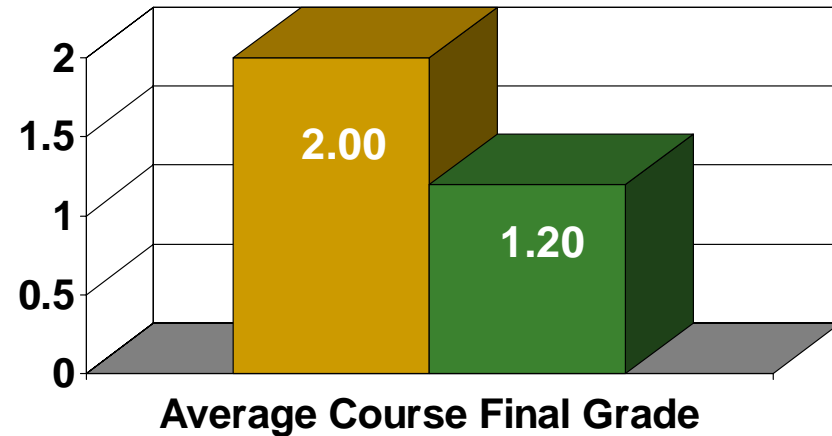
# Supplemental Learning

Findings, Spring 2006

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



■ Attended ■ Never Attended ■ College Baseline

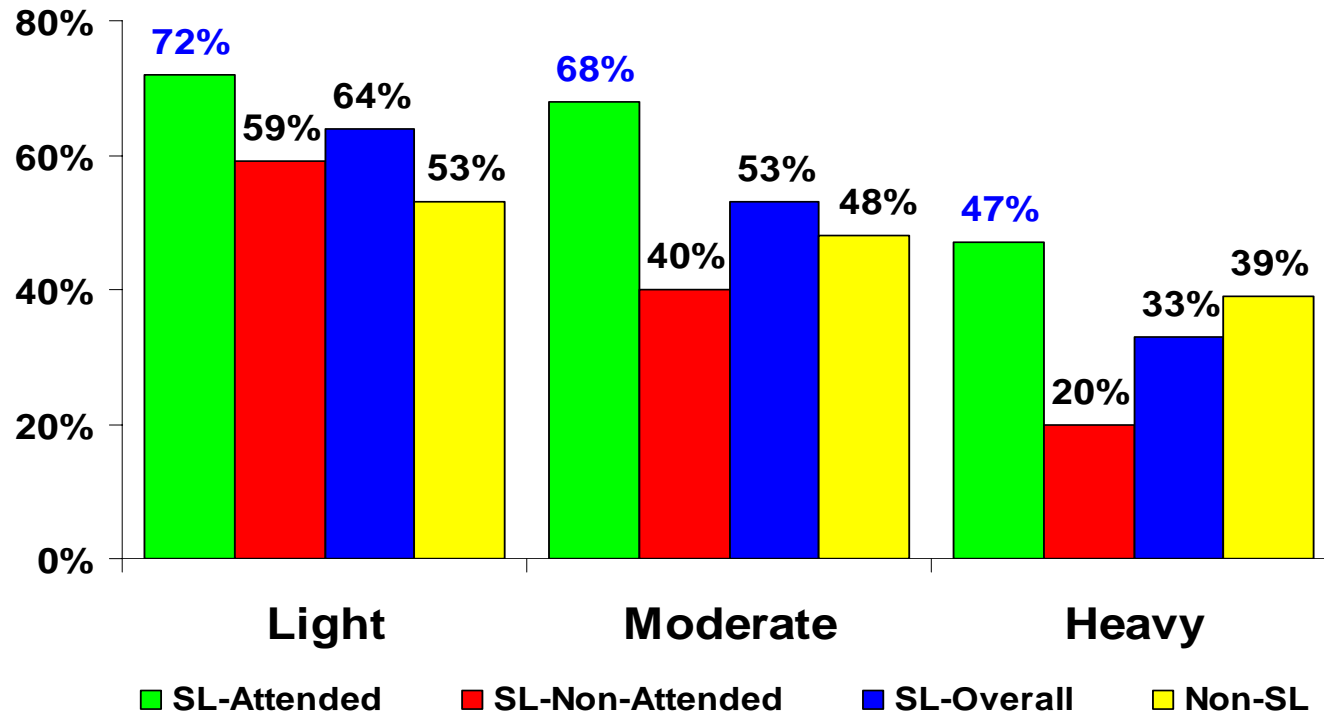


(Includes both FTIC and Non FTIC students)

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

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

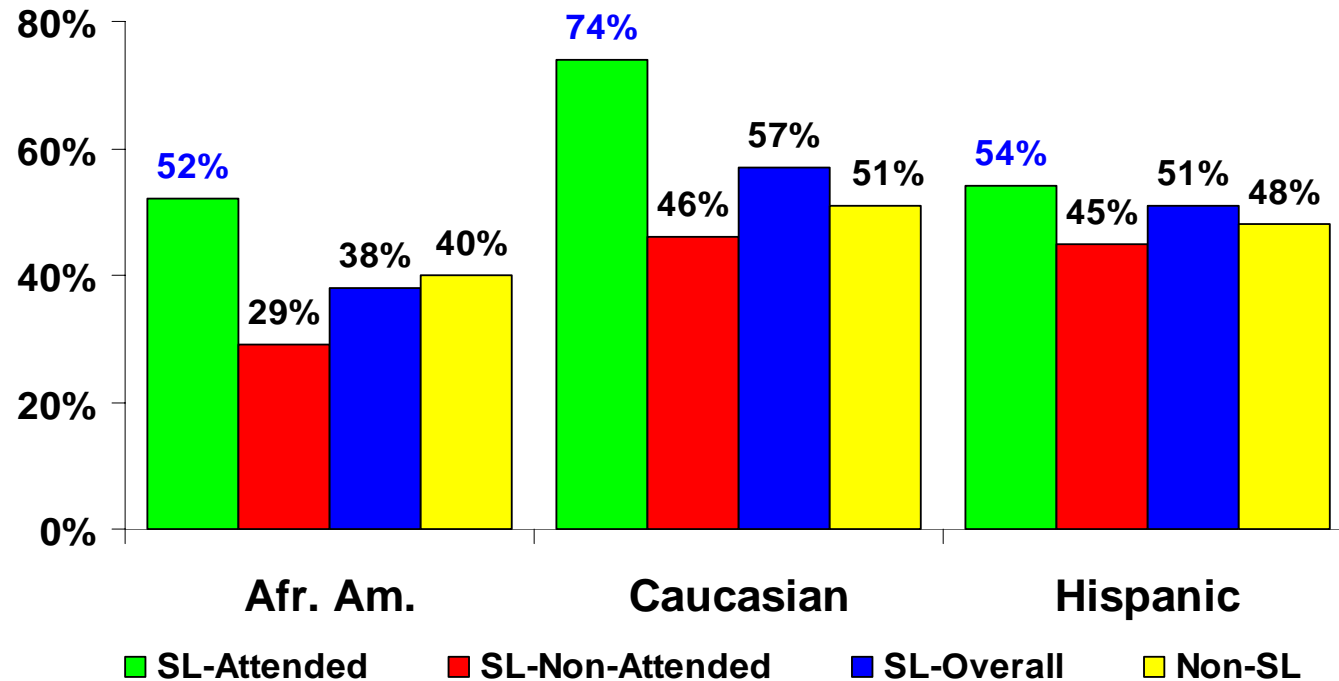
FTIC Students with a Grade of C or Better in Lower Level Math\* by Mandate Level



\*Courses: Math 0012, 0024 and 1033

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

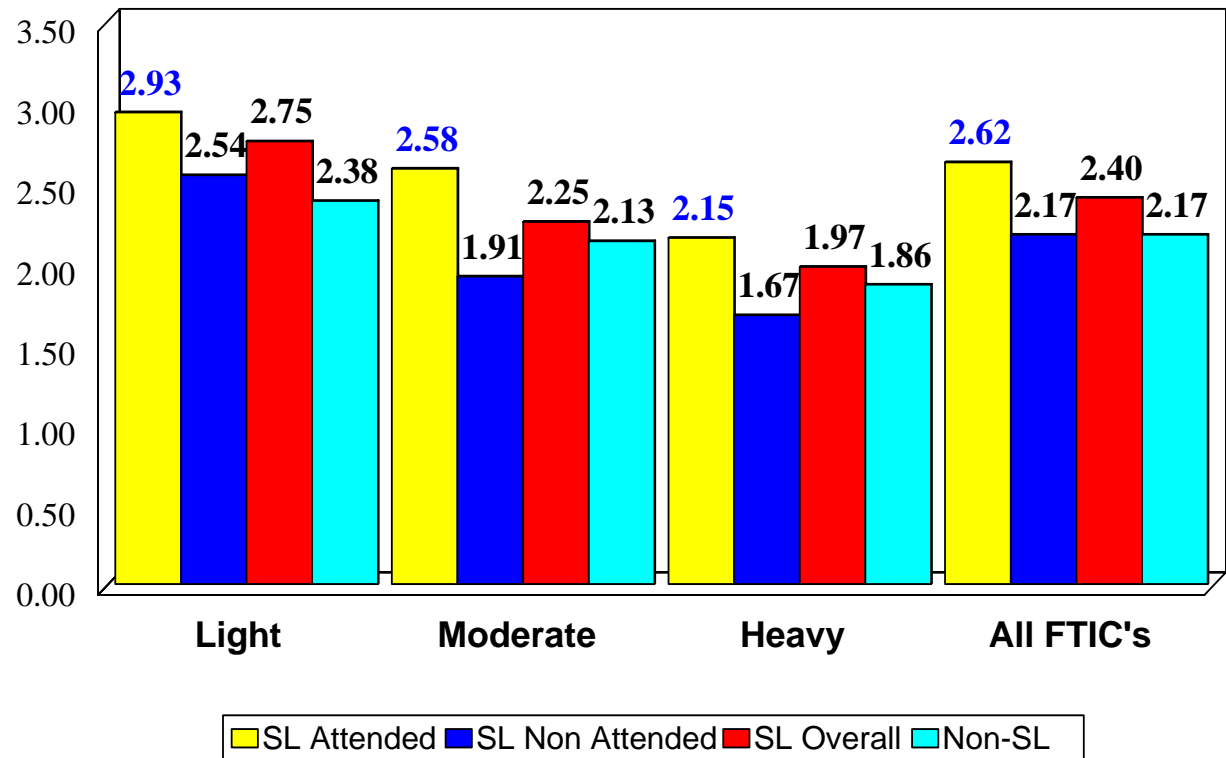
FTIC Students with a Grade of C or Better  
in Lower Level Math by Ethnicity



# Supplemental Learning: Findings, Spring 2006

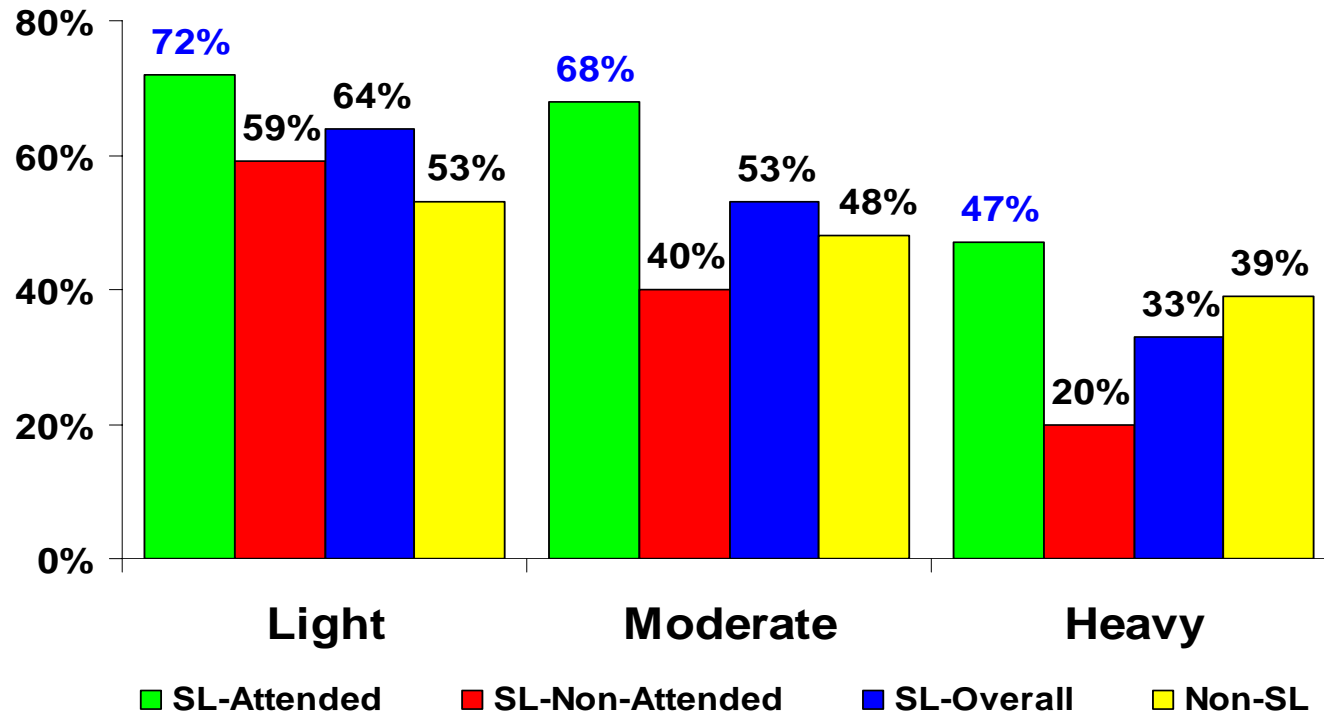
FTIC Average GPA's in Lower Level Math Courses  
by Mandate Level  
Spring, 2006

**FTIC Math students attending at least one SL session show higher GPAs in every remediation level**



**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

# 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
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# 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.”

# 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.

# 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
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# 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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