Team-Based Learning Meets Supplemental Instruction: How SI Facilitation Impacts Student Engagement and Performance

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Introduction

International SI Program History

- Developed in 1973 by Deanna C. Martin, Ph.D. at the University of Missouri-Kansas City in response to high attrition rates in historically difficult science courses.
- Based on non-remedial approach to learning to increase student performance and retention.

UHD Program History

In 2000, UHD implemented its own SI program following the traditional UMKC model.
Student demand and awareness has consistently increased.

Overview

- Goal: to improve understanding of course material.
- Targets historically difficult courses:
  - High rates of D, F, or withdrawal
  - Ex: BIOL, CHEM, PHYS, MATH, and HIST
- Peer facilitated weekly sessions
- Provided free of charge to all students

SI Leaders

Qualifications

- Minimum 3.0 cumulative GPA
- Earned grade of B or higher in selected course
- Effective communication skills
- Capacity to work with students with diverse backgrounds

Requirements

- Attend mandatory SI training prior to semester
- Act as a student model in the classroom
- Facilitate two 60-minute study sessions per week
- Devote 1-2 hours per week to plan activities and exam reviews
- Meet with course professor and coordinator periodically

Team Based Learning Model

- Students of diverse backgrounds are placed in permanent teams
- Prior to class, students are expected to complete a reading assignment following a detailed reading guide (provided by instructor)
- Student will take a RAP (Readiness Assurance Process) to test their knowledge of reading material
- The RAP consists of two assessments:
  - iRAT: Individual, closed book
  - tRAT: team-based, closed book, open discussion
- Based on RAP performance, instructor will tailor a mini-lecture towards troublesome concepts
  - Content is covered on the basis of learning outcomes
- Group application activities based on lecture topics
- Formal TBL courses at UHD: Biology 1301 & 1302 and Chemistry 1307 & 1308

Role of SI in the TBL Model

In the Classroom

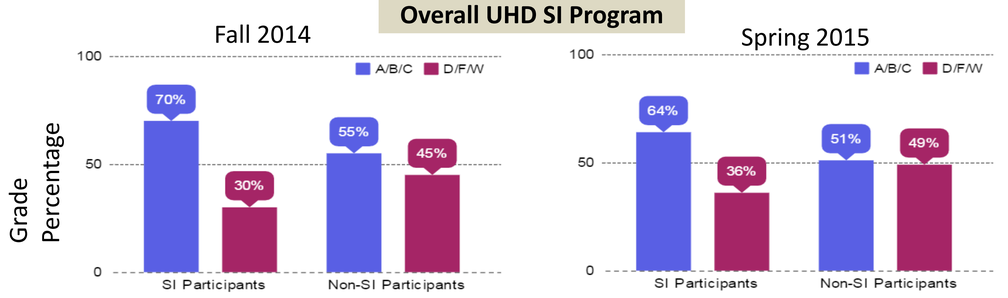
- SI leaders are an extension of the instructor during class
- SI leaders must be knowledgeable of class activities, learning outcomes, and course materials
- SI leaders aid in the understanding of course content during application activities
- SI leaders work with groups to facilitate active discussion

During Study Sessions

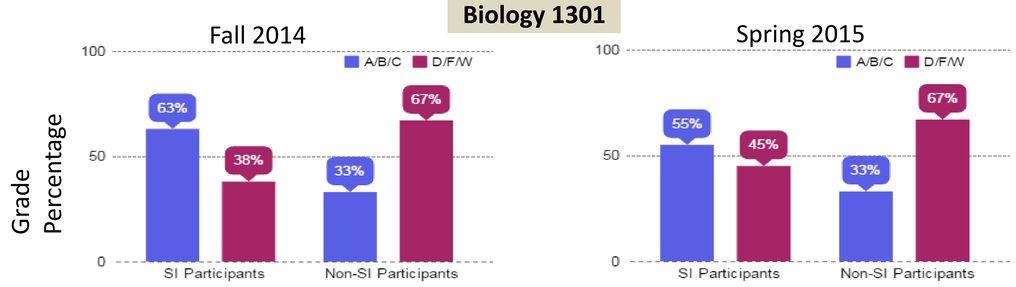
- During SI sessions, students work in a collaborative setting to review learning outcomes and application activities
- Sessions are not meant to be re-lecture but rather further the understanding of concepts through peer learning
- SI leaders model effective study skills and time management

Results: Academic Year 14-15

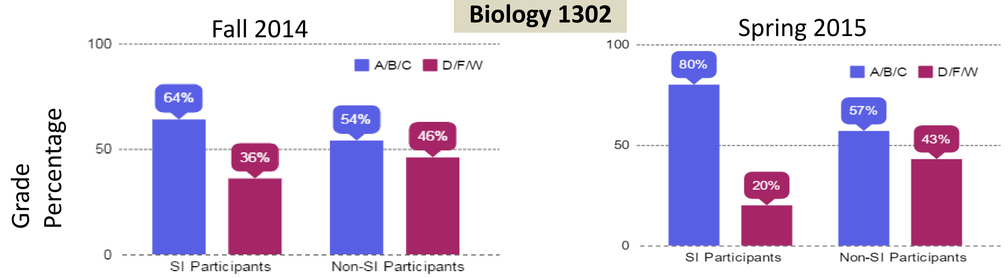
Overall UHD SI Program



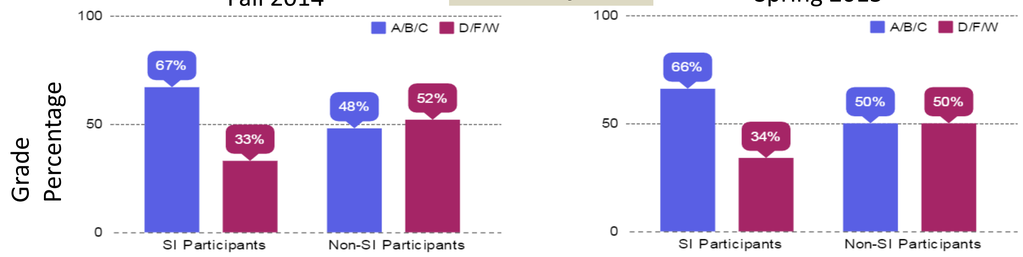
Biology 1301



Biology 1302



Chemistry 1307



Chemistry 1308

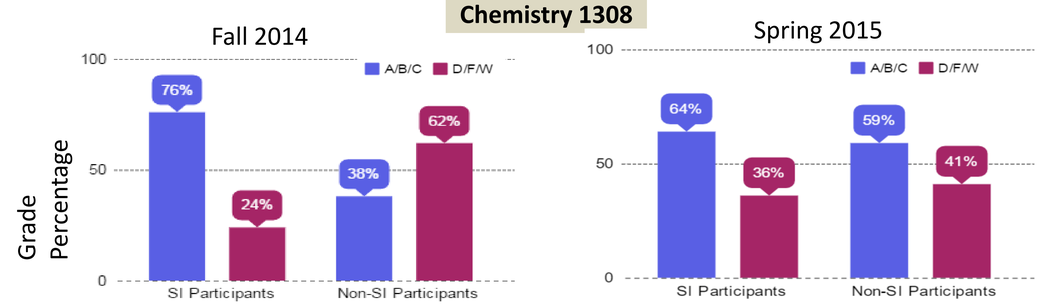


Figure 1. SI leader *Evelyn Valdez* hosting a BIOL 1301 exam review session (Fall 2015).

Study Sessions

- Informal – free and no appointment necessary
- Planned based on the majority of students' availability
- Sessions are offered online, evenings, and weekends in addition to various times of the day
- Open study hours on Fridays

Figure 2. SI leader *Bryttanni Duncan* hosting a BIOL 1301 final exam review session in the TBL classroom (Fall 2015).

Testimonials

"The SI is awesome and made me feel like I could ask her anything"

"Helpful to answer my in-class questions"

"The SI was very helpful always walked around making sure we understood the concepts and activities"

Future Directions

- Continue to improve passing grades and reduce withdrawal through collaborative learning and peer instruction
- Implement TBL model in other courses such as Math, History, and Physics
- Expand the SI program services to other courses
- Offer SI to more upper level courses (Sophomore and Junior level)

Figure 3. SI leader *Ashley Moreno-Gongora* hosting a CHEM 1307 exam review session (Fall 2015).