Supplemental Instruction and Course Redesign

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In this Session:

- Course Redesign Initiative
- Types of Redesigned Courses
- Data from Past Semesters
- Success Factors
- Limitations
- Future Goals
University of Houston-Downtown

- Founded in 1974
- ~15,000 enrolled students
- Commuter campus
- Hispanic-serving institution
- Average student age: 28
- Average class size: 26
- Five colleges
UHD Supplemental Instruction

Learner’s Community, Spring 2001

- 20 SI Leaders
- 9 courses
- 27 sections

Current: Spring 2018

- 39 SI Leaders
- 22 courses
- 54 sections
The Bricks: SI Leaders

2-day mandatory training

Monthly professional development meetings

Observations

Communities of Practice

Mentors

Performance Evaluations
The Idea

NOT SURE IF WORST IDEA

OR BEST IDEA
How It All Started

- Fall 2011: Natural Science Faculty
- Addition of Science Recitation for BIOL 1301 and CHEM 1307
- Fall 2013: THECB CSSP Grant
- Team-Based Learning Model & SI Integration
- Spring 2015: Expansion to BIOL 1302 and CHEM 1308
- Fall 2015 – Present: Redesign of College Algebra, U.S. History I, Physics I, Calculus I, etc.
Center for Teaching and Learning Excellence

- High-impact practices
- Teaching circles
- Online and blended courses
- Curriculum and faculty development
- Evidence-based instructional strategies
- Collaborative strategies
- Innovative learning environment
- Targeted faculty support
- High-impact practices
The Snowball Effect of Course Redesign
- Traditional
  - Class held 2x/week
  - Instruction-heavy
  - Little-to-no active classroom learning

- Extended
  - Extended class time (without increase in tuition)
  - Class held 2x/week
  - Instruction-heavy
  - Active learning/problem-solving segment reserved for end of class

- Accelerated
  - Class held 4x/week
  - Short, group learning component during class
  - Weekly exams

- Team-Based Learning (TBL)
  - Extended class time (without increase in tuition)
  - Class held 2x/week
  - Short lectures that follow individual & group quiz (RAP)
  - Application and group problem-solving activities

- Flipped/Inverted
  - Normal class time
  - Class held 2x/week
  - Lecture is held at home via pre-made videos
  - Class used primarily for solving problems in groups
Traditional
- Most courses on campus
- U.S. History II, Trigonometry, Business Math, Political Science

Extended
- College Algebra
- Calculus I
- General Physics I (sporadic)

Accelerated
- Developmental math
- Economics

TBL
- General Biology
- Introduction to Chemistry
- General Chemistry

Flipped
- Organic Chemistry I
# Role of the SI Leader in the Classroom

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Extended</th>
<th>Accelerated</th>
<th>TBL</th>
<th>Flipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Model student</td>
<td>• Model student</td>
<td>• Attends class 4 times a week</td>
<td>• Largely interactive</td>
<td>• Extension of instructor</td>
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<tr>
<td>• Asks questions</td>
<td>• Asks questions</td>
<td>• Some interaction during or at end of class</td>
<td>• Assist groups with application activities</td>
<td>• Facilitates individual and group learning</td>
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<tr>
<td>• Actively takes notes</td>
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**TBL**
- Largely interactive
- Assist groups with application activities

**Flipped**
- Extension of instructor
- Facilitates individual and group learning
Brainstorm Break

Do you have redesigned courses at your institution?
What are they?
Why were these courses chosen?
How are your SI/PASS/Peer Leaders utilized in these courses?
Construction

Data Snapshot, Spring 2014 – Fall 2017*
SI Attendance by Class Type

- **Traditional (Control)**: 36.8% participation, 58.4% percent repeat students
- **Extended**: 35.3% participation, 58.3% percent repeat students
- **Accelerated**: 33.3% participation, 56.3% percent repeat students
- **Team-Based Learning**: 53.0% participation, 72.4% percent repeat students
- **Flipped**: 59.3% participation, 78.7% percent repeat students
- **Total**: 53.7% participation, 72.7% percent repeat students

Legend:
- Participation to SI
- Percent Repeat Students
SI Attendance by Class Type

Traditional (Control)  
72.7%  
15.1%  
11.5%  

Extended  
69.9%  
14.1%  
13.2%  

Accelerated  
68.1%  
18.3%  
13.6%  

Team-Based Learning  
57.4%  
20.0%  
22.6%  

Flipped  
51.6%  
19.0%  
29.5%  

Legend:  
- Blue: 1-3 Visits  
- Pink: 4-6 Visits  
- Yellow: 7+ Visits
Pass (ABC Rates) by Class Type

Traditional (Control) 72.1% 57.8%
Extended 75.0% 54.0%
Accelerated 84.6% 68.9%
Team-Based Learning 64.1% 46.7%
Flipped 48.5% 37.8%
Total 69.0% 54.8%
Pass (ABC Rates) for Select Courses

- U.S. History I (Traditional) 71.0% 52.0%
- Calculus I (Extended) 69.6% 64.9%
- Intermediate Algebra (Accelerated) 55.2% 49.0%
- General Biology I (Team-Based Learning) 57.8% 49.1%
- Organic Chemistry I (Flipped) 27.4% 46.8%

Legend:
- Blue: Baseline Pass Rate
- Yellow: Fall 2016 Course Pass Rate
- Green: SI Participant Pass Rate (Redesigned)
- Pink: Non-SI Pass Rate (Redesigned)
Structural Integrity

Rare photos of me jumping to conclusions
When does SI Work Best (at UHD)?

- Student Success
- Faculty Buy-In
- Course Redesign
- Student Self-Efficacy

SI
What We Learned

- SI attendance is the greatest in classes that have a group learning component inside the classroom

- Commuter campuses (such as UHD) benefit greatly from bringing SI into the classrooms
  - Build rapport with students immediately
  - Bypass scheduling conflicts

SI leader Emily Steinman conducts a team-based exam review for General Biology I using Jeopardy (Spring 2018).
The Mortar: Faculty Buy-In

Faculty Participation

- Marketing sessions
- Validating “expertise” of SI Leader
- Fostering two-way communication
- Promoting SI to their colleagues

How we got our UHD faculty on board

- Found an advocate in each department
- Data from past semesters
- Pre-semester networking session
- Grant meetings
Limitations

• Student self-efficacy
• Effect of faculty instruction
• Long-term trends
• Redesigned courses
  • Some not comparable
  • Course difficulty

SI leader Carlos Guajardo conducts a team-based exam review for history using Kahoot! (Spring 2017).
Where We Go From Here

- Prioritize staffing to redesigned sections that integrate SI with active learning
- Collaborate with faculty teaching circles
- Faculty liaisons for redesigned courses
- Long-term data analyses
Thank you!

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