Building Capacity for AB 705: How Cross-Campus Teamwork and a Shared Sense of Community Inspires and Sustains Student Success in Transfer-Level Mathematics at Citrus College

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AB705 Work At Citrus College

What will be discussed during today’s presentation

- Curriculum, Sequencing, and Placement
- Support
- Classroom Redesign and Pedagogy
- Data and Results
Citrus College Math Sequence for Fall 2018
AB705 Work At Citrus College

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Belief In Student Capacity

Power of Expectation

1. What percent of your student do you believe will pass your course?

1. What do you think the results of the experiment?

1. After watching the video, does your answer to question one change?
Adjunct Faculty as Embedded Tutors

- Believe in Student Capacity
- Adjunct Faculty as Embedded Tutors
- Continuous Professional Development
- Helps Students and Instructor
- Ability to make on the spot lesson changes
Community of Practice

- Weekly meetings
- Backwards Design Workbook
- Discuss weekly classroom issues
- Support each other
- Brainstorm ideas and solutions
- Mentor new instructors/adjuncts
- Plan changes for future semesters
- Encourage two classroom visitations and provide feedback
Supporting the Affective Domain

▪ Build a Supportive Classroom Community

▪ Reinforce Productive Struggle

▪ Growth Mindset

▪ Belief in Student Capacity

▪ Teach Students How to be College Students and Believe in Themselves

▪ Unique First Generation Student Challenges
Supporting the Affective Domain
Building a Supportive Classroom Community

- Group Cards
- Group Quizzes
- Encourage and expect group interactions from Day 1
  - Small groups of 3-4
  - Large Group (entire class)
  - Wean them off asking you!
  - The power of the group
- College Scavenger Hunt (Canvas Discussion Board assignment, random groups created by Canvas)
Supporting the Affective Domain
Benefits of Productive Struggle

- Let Learners’ Struggle Activity (Annie Murphy-Paul, 2014)

- Opportunities for struggle during class time!
  - Choose challenging lesson problems that don’t frustrate
  - Provide ample struggle time
  - Learners explain their work
  - Encourage help-seeking behavior
Supporting the Affective Domain
Growth Mindset

- Carol Dweck Brainology (in-class) assignment
  - Fixed vs. Growth Mindset
- Angela Duckworth Grit Video / Grit Scale
- Educational Autobiography
  - Start in-class on Day 1, finish as homework, return the assignment on Day 2
  - Write students a personal note based on their experiences
One of the worst experiences I've had was when my (high school) math teacher told me I had a learning deficiency. This crushed me and made me feel stupid and as if I would amount to nothing or succeed in life.

...I was always finishing first on multiplication tables (elementary school) and everyone told me how great I was but that didn't push me, it just gave me the fixed mindset that I didn't have to work as hard as others.

I have had more than a few bad experiences going through my education years...the worst was when I was incarcerated for 4 months...One of the only things I thought of while being incarcerated was how I will become someone in life doing it the right way.

...much of the time I have not received Financial Aid and have had to pay out of pocket...I work full-time to pay my tuition.
Supporting the Affective Domain
Believe in Student Capacity
(Can Rise to the Challenge)

- Study Guides before Exams
- Exam ReDoses
- Practice Quizzes just before the real quiz
Supporting the Affective Domain
Teach Students How to be College Students and Believe in Themselves

- Nudges/Reminders
- Encourage them to take photos of boardwork, reminders written on board
- Use Canvas:
  - Announcements
  - Modules
    - OER Reading/Videos
    - Encourage students to read/watch before class
Supporting the Affective Domain
Teach Students How to be College Students and Believe in Themselves (continued)

After a 1-minute paper - Student Reflection After Exam 1:
• Create a study group
• Go to the STEM Center for Help
• Watch lecture videos and fully understand the lectures
• Ask for more help in class
• Ask more questions
• Organize my work and take better notes
• Finish all homework and workbook assignments
• Review the classwork after class
• Pay better attention in class
Supporting the Affective Domain
First Generation Unique Student Needs

❖ Understanding the importance of attending each class
❖ OER (low/no cost) Course Materials
❖ Include in syllabus information about College Services (including location/hours)
  ● Tutoring Centers
  ● Library
  ● Student Health Center
  ● Financial Aid
  ● Food Pantry/Campus Food Distribution Dates
  ● Rave Guardian APP
TIME MANAGEMENT

Do your choices reflect your goals?

“Procrastination is the foundation of all disasters”

Pandora Poikilos.

Introduction

Why are we here?
What is the difference between high school and college?

<table>
<thead>
<tr>
<th>High School</th>
<th>College</th>
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<tbody>
<tr>
<td>Less independence; choices made for you</td>
<td>Take ownership of time, schedule, etc.</td>
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<tr>
<td>You are a minor</td>
<td>Treated like a responsible adult</td>
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<tr>
<td>Limited course schedule to choose from</td>
<td>Wide variety of courses available</td>
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<td>Generally similar class formats/sizes</td>
<td>Lecture or discussion-based, varied size/formats</td>
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<tr>
<td>Set schedule from morning to afternoon</td>
<td>Take ownership of time, schedule, etc.</td>
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<td>Mostly same classmates</td>
<td>Opportunities to meet new people</td>
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<td>More memorization androte learning</td>
<td>More critical thinking and applied learning</td>
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<tr>
<td>More time spent in class</td>
<td>Less time in class BUT more homework</td>
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<tr>
<td>Must attend high school</td>
<td>Attendance is up to you. College is optional</td>
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<tr>
<td>Fewer students means it is easy to stand out</td>
<td>No longer automatically stand out</td>
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<tr>
<td>Many opportunities for graded work</td>
<td>Less work; sometimes only a mid-term &amp; final</td>
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<tr>
<td>Support networks will likely find you</td>
<td>Often you must seek out support</td>
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<tr>
<td>Poor performance can still lead to college</td>
<td>Transferring out will depend on your performance</td>
</tr>
<tr>
<td>Live near school</td>
<td>Transportation/commute management</td>
</tr>
<tr>
<td>Work is less important</td>
<td>Work might be necessary</td>
</tr>
</tbody>
</table>

- Importance of GPA
- FERPA
- Course repeats
- Transcripts
- Transfer Deadlines
- Campus Resources
**ROCKS, PEBBLES, SAND**

Where do you spend your time?

<table>
<thead>
<tr>
<th>ROCKS</th>
<th>PEBBLES</th>
<th>SAND</th>
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</table>

Do you need to reconsider your priorities?

*Jar of Life video*  
*Time Management Assignment*
Does your schedule reflect your rocks and pebbles or sand?

-Using technology as a tool
Procrastinators: Which One Are You?
Identify your procrastination type and learn to manage it

- Perfectionist
- Worrier
- Crisis-Maker
- Dreamer
- Overdoer
- Defier

Group Activity
Highlight some solutions
Identify Campus Resources

Adapted from "It's About Time: the 6 Styles of Procrastination & How to Overcome Them" by Dr. Linda Sapadin with Jack Maguire, Penguin Books, 1996; Sanger Learning And Career Center
AB705 Work At Citrus College

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Physical Classroom Changes

- New Koi Furniture
- Whiteboards on all Four Walls
- Portable Whiteboards
- PAL Carts
Active Learning Classrooms

- SCALE-UP: Student-Centered Active Learning Environment with Upside-Down Pedagogies (NCSU)
- TEAL: Technology-Enabled Active Learning (MIT)
- TILE: Spaces to Transform, Interact, Learn, Engage (UIOWA)
Think-Pair-Share
360 Degree Flexible Classroom

https://www.youtube.com/watch?v=-NN-EneAqQU
VERTICAL NON-PERMANENT SURFACES in math class

**Whiteboard**
- Vertical (i.e., wall mounted)
- One marker per group
- Students stand
- Erasable

You can also use...

- Chalkboards!

**Time to 1st Notation**
- Start writing faster
- Take risks
- Erasable!

**Eagerness**
- Participation
- Discussion
- Persistence

**Non-linearity**
- More accurately reflects thinking process

**Mobility of Knowledge**
- Groups talk, compare, share
Ex: Solve the absolute value inequality.

\[ |x - 8.2| \leq 1.5 \]

\[-1.5 \leq x - 8.2 \leq 1.5 \]

\[ 6.7 \leq x \leq 9.7 \]

\([6.7, 9.7] \)
Ex: Find the baby birth weights that correspond to

\[ |x - 8.2| \leq 1.5 \]

\[-1.5 \leq x - 8.2 \leq 1.5 \]

\[ 6.7 \leq x \leq 9.7 \]

\[ [6.7, 9.7] \]

The range of baby birth weights is 6.7 to 9.7 pounds.
360 Degree Classroom Activity

- Teaching Others
- Reading
- Group Discussion
- Lecture

On the poster paper, rearrange the techniques from lowest retention of the material to highest retention of the material two weeks later.
Average Retention Rates

5%  Lecture
10% Reading
20% Audio-Visual
30% Demonstration
50% Group Discussion
75% Practice
90% Teaching Others

Passive Teaching Methods

Participatory Teaching Methods

*Adapted from National Training Laboratories, Bethel, Maine
Equity-Minded Classroom

- A large growing body of evidence shows that students perform better in active learning environments than in the traditional lecture.
- Providing constant opportunities for students to discuss in a collaborative, low-pressure, environment has huge educational gains for:
  - Women (Lorenzo, Crouch, & Mazur, 2006)
  - Minorities (Prezler, 2014)
  - Low-Income (Haak et al. 2011)
  - First-Generation College Students (Eddy & Hogan, 2014)
What will be discussed during today’s presentation

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Total Fall Enrollment for Math
Access to Transfer-Level Math:
First-time Enrollment in Transfer-Level Math

<table>
<thead>
<tr>
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<th>Fall 15</th>
<th>Fall 16</th>
<th>Fall 17</th>
<th>Fall 18</th>
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<tbody>
<tr>
<td>Below</td>
<td>2,291</td>
<td>1,940</td>
<td>2,165</td>
<td>1,971</td>
</tr>
<tr>
<td>Transfer</td>
<td>18% (n=405)</td>
<td>19% (n=366)</td>
<td>24% (n=511)</td>
<td>56% (n=1,101)</td>
</tr>
</tbody>
</table>
Shift from Basic Skills to Statistics

- **Fall 15 (n=2,291)**
  - Basic Skills (Two or more levels below): 50%
  - Intermediate Algebra (One level below): 32%
  - Statistics (Transfer-level): 10%
  - Other Transfer-level Math: 8%

- **Fall 16 (n=1,940)**
  - Basic Skills (Two or more levels below): 43%
  - Intermediate Algebra (One level below): 38%
  - Statistics (Transfer-level): 11%
  - Other Transfer-level Math: 8%

- **Fall 17 (n=2,165)**
  - Basic Skills (Two or more levels below): 45%
  - Intermediate Algebra (One level below): 31%
  - Statistics (Transfer-level): 13%
  - Other Transfer-level Math: 11%

- **Fall 18 (n=1,971)**
  - Basic Skills (Two or more levels below): 9%
  - Intermediate Algebra (One level below): 34%
  - Statistics (Transfer-level): 22%
  - Other Transfer-level Math: 34%
One-year Completion Rate in Transfer-level Math

- Fall 15 - Spring 16: 19%, N=2291
- Fall 16 - Spring 17: 23%, N=1940
- Fall 17 - Spring 18: 28%, N=2165
- Fall 18 - Spring 19: 45%, N=1971
- Fall 18 - Spring 19 (Math165): 65%, N=670
Quantitative Data - Survey

Students were asked to take a survey containing questions about their experience in *Corequisite Support For Introductory Statistics* (MATH065+165)

- Number of students enrolled in MATH065+165 with Corequisite in fall 2018 and spring 2019: 1,109
- Number of total responses: 811
- Number of unduplicated* survey responses: 697

*If a student took the survey more than once, only their last survey entry was counted

=63% Response Rate
Survey Results

Q1. How would you rate the helpfulness of each of the following teaching methods and materials used in this course?

- Calculator
- Diversity of format for the content delivered (e.g. video, audio, online, etc.)
- Instructor’s lectures
- Manipulatives (e.g. dice, coins, cards, etc.)
- Movable furniture
- Quality of materials provided (e.g. worksheets, PowerPoint presentations, etc.)
- Whiteboard
- Workbook
- Working in groups

Ranking from most to least helpful (% that rated _______ as moderately or very helpful):

- Calculator (97%)
- Whiteboard (91%)
- Quality of materials provided (88%)
- Working in groups (87%)
- Instructor’s lectures (87%)
- Manipulatives (80%)
- Diversity of format for content delivered (77%)
- Movable furniture (75%)
- Workbook (51%)
Survey Results

Q5. Which of the following best captures your feeling about this course?

- This course is too easy for me. (4%)
- This course is the right level for me. (76%) - the majority of students felt the course was just right for them
- This course is too difficult for me. (20%)

...but how well did these students do in the course?

<table>
<thead>
<tr>
<th>Q5 Response</th>
<th>Total respondents (that provided Student ID)</th>
<th>% of respondents successful in course</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course is too easy for me.</td>
<td>18</td>
<td>89%</td>
</tr>
<tr>
<td>This course is the right level for me.</td>
<td>440</td>
<td>91%</td>
</tr>
<tr>
<td>This course is too difficult for me.</td>
<td>99</td>
<td>64%</td>
</tr>
</tbody>
</table>
Qualitative Data - Focus Groups

Statistics with Corequisite Support Focus Groups

- 7 Focus Groups
- 32 students total

Asked each group five questions:

1. What do you like about this class?
2. Who or what has helped you succeed in this class?
3. How has this class impacted your success at this college?
4. How has this class helped you achieve your educational goal?
5. Lastly, is there anything else you would like to add?
Snowball Activity

1. List 3 ways you can infuse Affective Domain techniques/activities/assignments into your classes?

1. List at least 2 concerns/worries about adding Affective Domain techniques/activities/assignments into your classes.
Citrus College
Open House:
Math and English
Corequisites in
Action

Monday,
Oct 28, 2019
9-2PM

By The California
Acceleration Project
Thank you!

Questions?

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