



UNIVERSITY OF  
CENTRAL  
ARKANSAS

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# The Impact of Corequisite Math Remediation at UCA

NADE 2019

# By the Numbers

## University of Central Arkansas

- ▶ 11,350 total enrollment
- ▶ 1,937 first-time freshmen
- ▶ 24.3 Average ACT
- ▶ 362 students in remedial math

## Dept of Student Transitions

- ▶ 13 full-time faculty
- ▶ 6 full-time math faculty
- ▶ 0-1 adjunct faculty for math
- ▶ Over 75 years teaching experience



# PLACEMENT

Refining the pathway

# Before Data: Placement Guide from Fall 2015

Placement Scores	Majors: Fine Arts / Communication Liberal Arts Undecided	Majors: Business, Education, Health and Behavioral Sciences, Natural Sciences and Mathematics
Math ACT 17 – 18	UNIV 0360 – Foundations of QL <b>AND</b> MATH 1360 – Quantitative Literacy	UNIV 0390 – Foundations of CA <b>AND</b> MATH 1390 – College Algebra  <b>--OR--</b>  <b>Accelerated:</b> UNIV 1340 – Intermediate Algebra <b>AND</b> MATH 1390 – College Algebra
Math ACT 16 or below	<b>Full Term Courses:</b> UNIV 0331 – Progressive Mathematics <b>OR</b> UNIV 1340 – Intermediate Algebra	

# After Data: Placement Guide

## Fall 2016 - Present

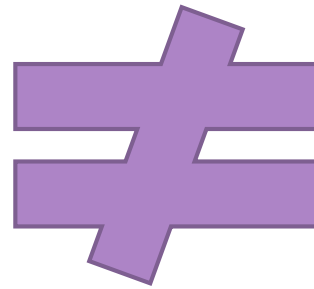
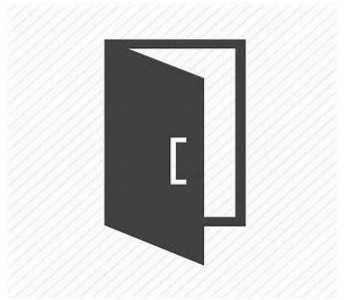
Placement Scores	Majors: Fine Arts / Communication Liberal Arts Undecided	Majors: Business, Education, Health and Behavioral Sciences, Natural Sciences and Mathematics
Math ACT < 19 (or equivalent)	UNIV 0360 – Foundations of QL <b>AND</b> MATH 1360 – Quantitative Literacy	UNIV 0390 – Foundations of CA <b>AND</b> MATH 1390 – College Algebra



# LOGISTICS

Creating effective options

# Before Data: Scheduling Courses



Student data-  
informed decisions

# Factors that Influenced Our Design

- ▶ Number of Faculty vs. Number of Students
- ▶ Size of Classrooms
- ▶ Student Makeup
- ▶ Other Outside Factors
  - Lack of Student movement between departments
  - What the students took next...
  - Control of courses involved



# Scheduling and Design Options

- ▶ Scheduling
  - 2 day vs. 3 day vs. 4 day vs. 5 day
  - Foundations before vs. Foundations after, if on same day
- ▶ Student and Faculty Makeup
  - Co-mingled vs. Non co-mingled
  - Paired or Not-Paired

# After Data: Course Schedules

- ▶ 5 day versus 3 day
  - Statistically no difference (80% vs. 78% (C rates))
- ▶ 5 day versus 2 day
  - Statistically 5 day performs better (80% vs. 64% (C rates))
- ▶ 5 day versus 4 day
  - Statistically no difference (80% vs. 77% (C rates))

# After Data: Course Schedules

- ▶ 5 day and 3 day are best, statistically
- ▶ Non co-mingled
- ▶ 1 Faculty

# Overall Fall vs. Spring Completion Rates

Completion is a C or higher

78%

Fall 2015 - Present

62%

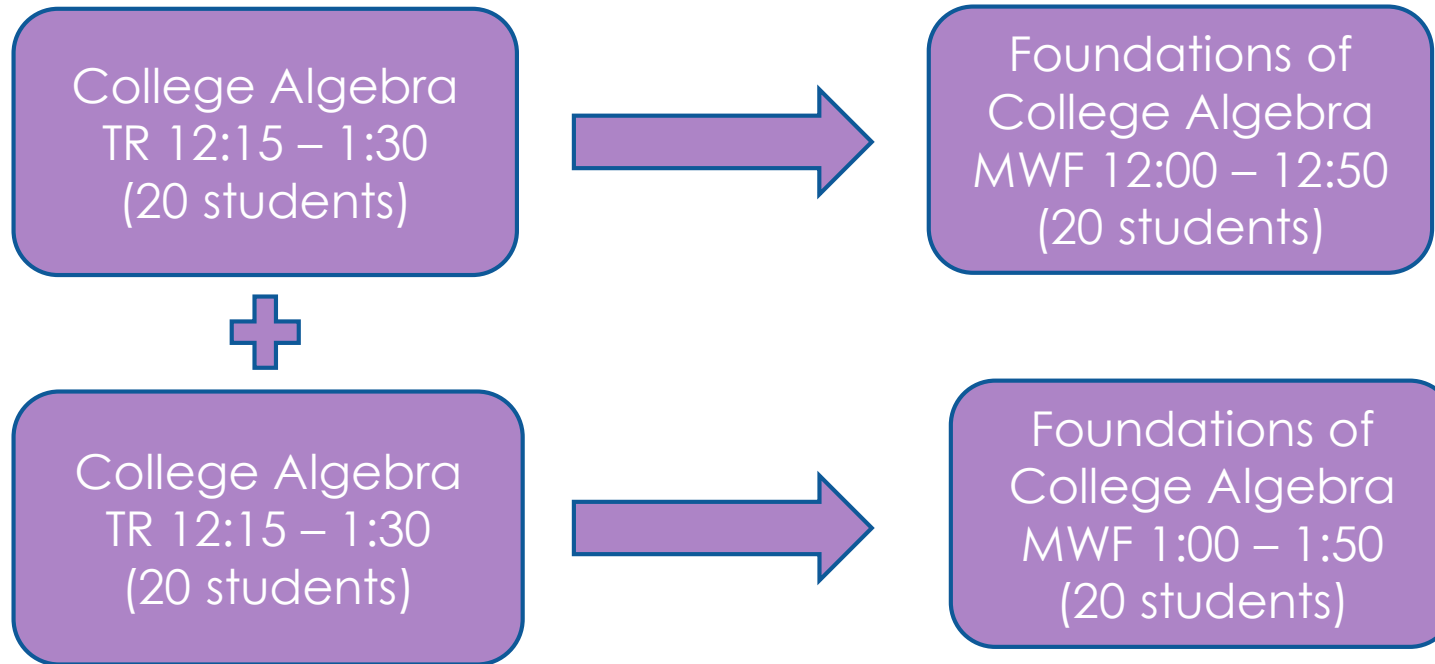
Spring 2016 – Spring 2018

# After Data: Course Schedules

- ▶ 5-day-a week spring co-requisite courses.
- ▶ Embedded tutors

# Co-Requisite Design

## College Algebra or Quantitative Literacy





# CURRICULUM

Developing and refining course content

# Before Data: Developmental Curriculum

- ▶ 2 separate courses (IA or PM then CA/QL)
- ▶ 2 sets of content (supposedly aligned)
- ▶ 2 different semesters



# College Algebra Final Data

Traditional vs. Corequisite

Semester	Traditional (% C or higher)	Co-Requisite (% C or higher)
Fall 2016	52% (n = 584)	64% (n = 265)
Fall 2017	56% (n = 531)	74% (n = 325)
Fall 2018	50% (n = 533)	71% (n=312)



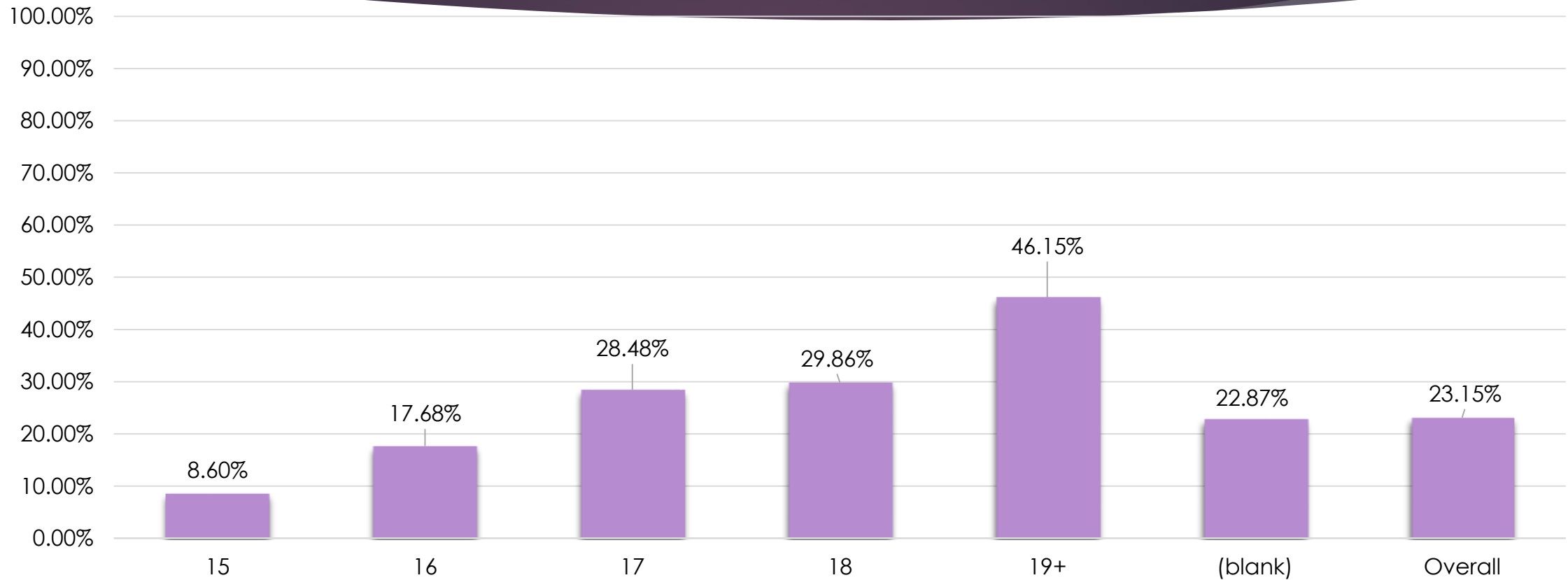
# ASSESSMENT

Evaluating Effectiveness of Co-requisite Design

# Data Before Co-requisite Design

1-year Success Rates in Dev Ed and College Algebra  
Fall 2012 - Fall 2015

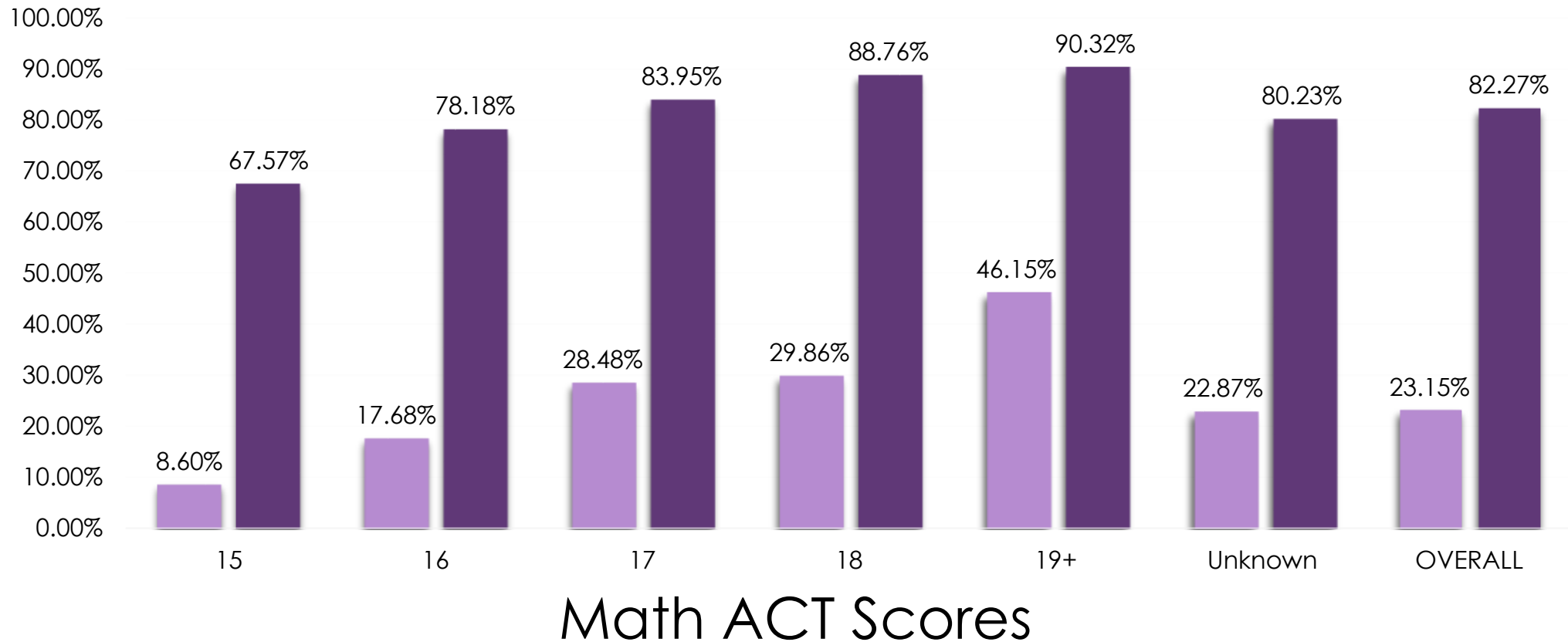
(Success is a D in College Algebra)



Math ACT Scores

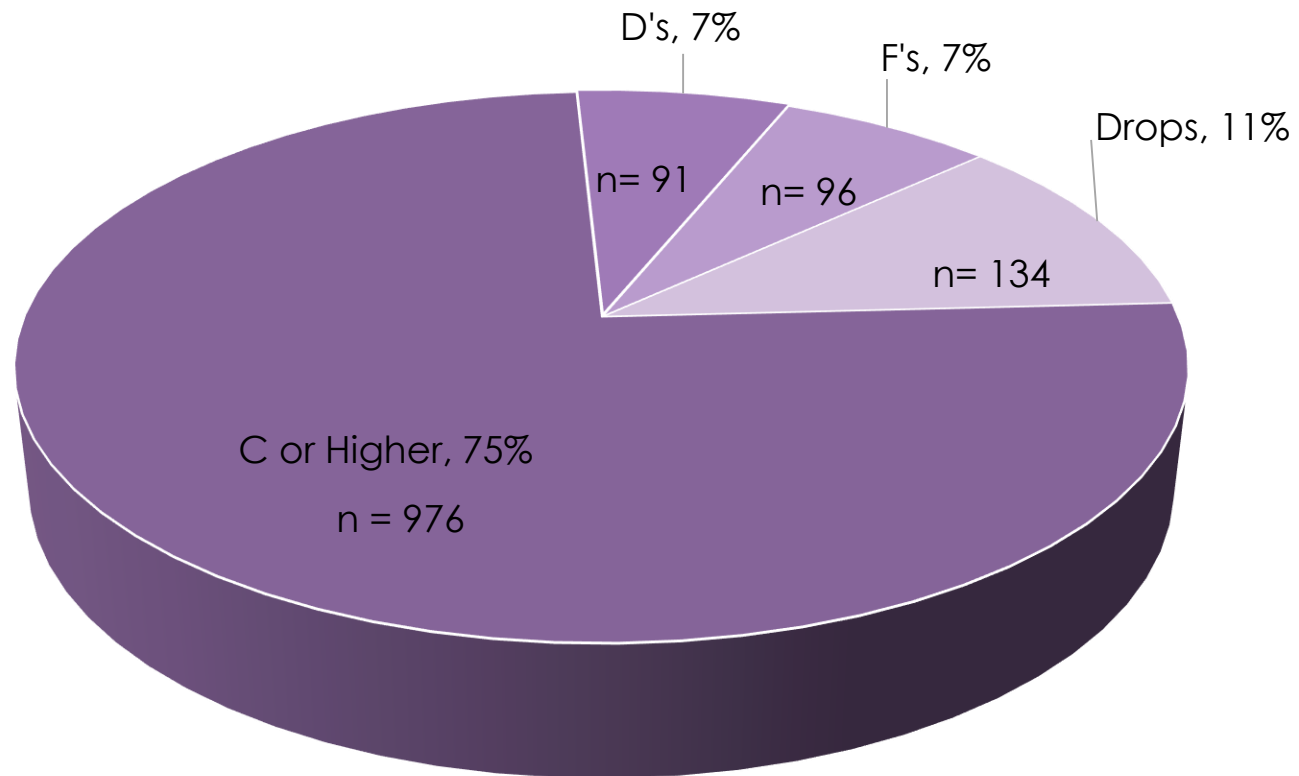
# Data After Co-requisite Design

1-Year College Algebra Completion Versus FCA  
Fall 2015 – Fall 2018  
(Success is a D in College Algebra)



# College Algebra Pass Rates

Fall 2015 – Fall 2018





# Next Steps

Assessing Mindset and Math Anxiety

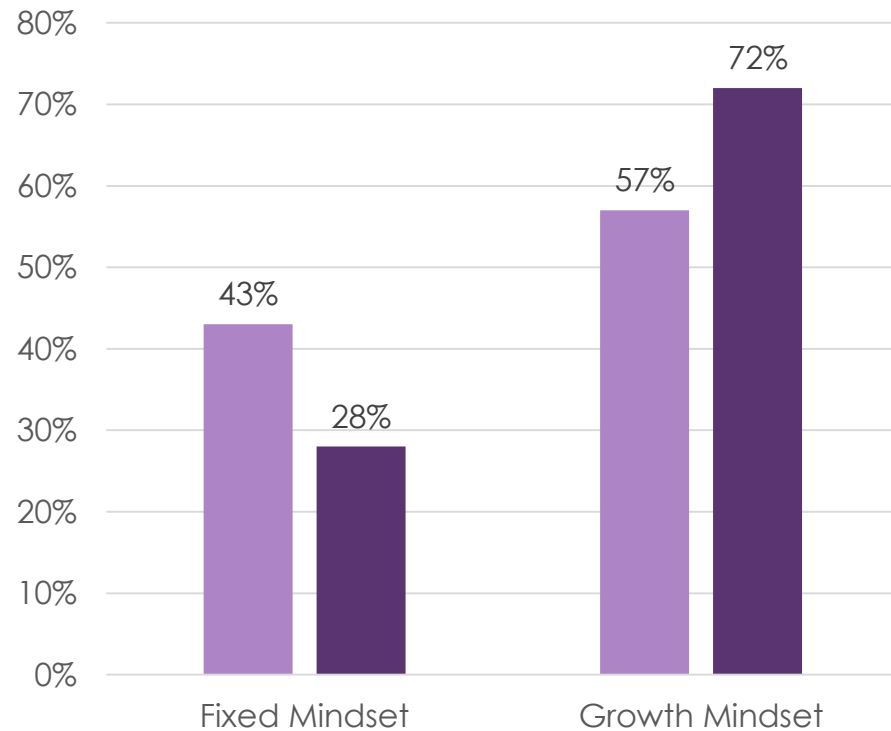
# Logistics

- ▶ Mindset survey
  - Mindset Assessment Profile Tool (Mindset Works)
- ▶ Math Anxiety survey
  - Do You Have Math Anxiety? A Self Test (Ellen Freedman)
- ▶ Utilized Google Forms to administer
- ▶ Administered to 3 College Algebra classes and 1 Quantitative Literacy class (2 instructors)

# Mindset and Anxiety Changes

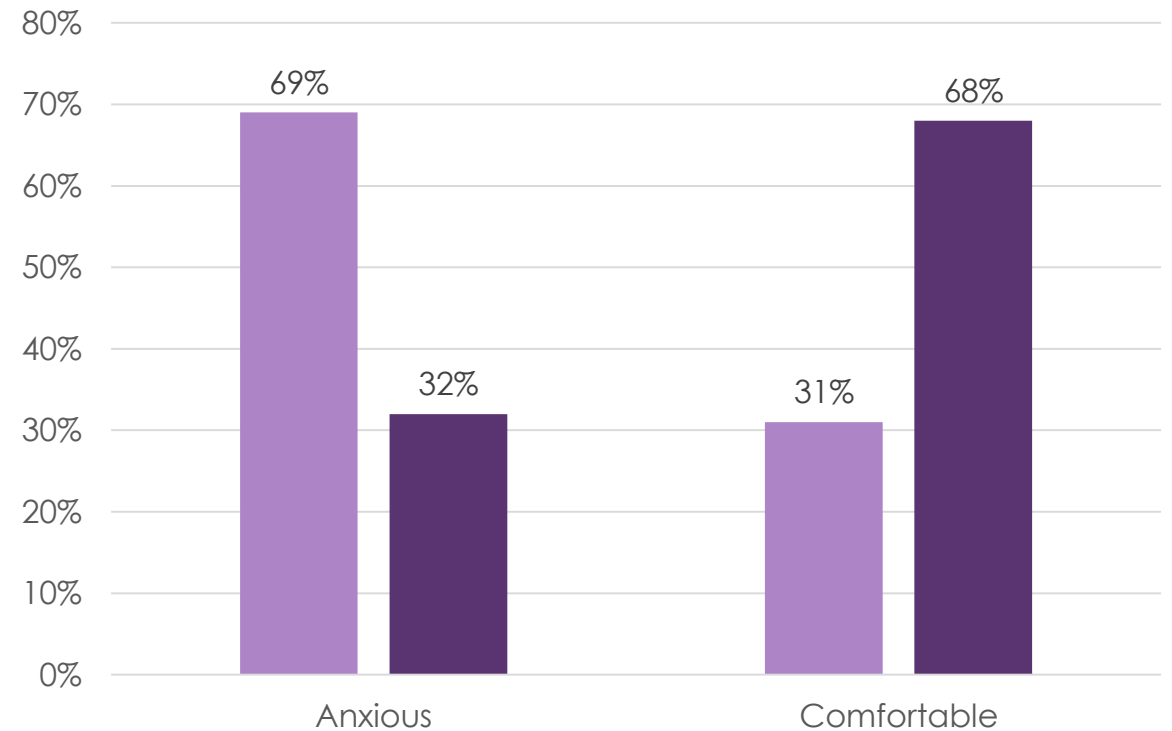
## Mindset Results Fall 2018

■ AUGUST (N=127) ■ DECEMBER (N=127)



## Math Anxiety Results Fall 2018

■ AUGUST (N=127) ■ DECEMBER (N=127)





# Moving Forward with Mindset

- ▶ Strategic interventions embedded within instruction
- ▶ Broaden research to CA and QL students outside of the co-requisite model
- ▶ How does faculty mindset affect student mindset, anxiety, and overall success?

# Goals for 2019

- ▶ Further exploration into student demographic data
- ▶ Who are our spring semester students?
  - Creating spring semester interventions