# Ensuring Corequisites Have the "Key Ingredients" for Student Success

Data-Driven, Equity-Focused Corequisites Conference

November 2019

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RAND EDUCATION AND LABOR

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## Goals for today's session

- Learn about the 9 "key ingredients" RAND used to assess corequisites in Texas colleges
- Consider how to use "key ingredients" to continuously improve corequisites:
  - Ensure corequisites are designed to be aligned with promising practices
  - Identify ways to track progress and improvement



## We've been studying reading/writing corequisites in Texas since 2015

5 colleges across 4 systems

Students randomized to:

1) Standalone Integrated Reading and Writing course
2) English 1301 corequisite, different models across colleges

Examined course success; persistence, transfer and completion; student experiences; implementation; costs

## We've found positive short-term impacts for reading/writing corequisites

**15%** increase in 2-year completion of English 1301

Underserved populations benefit as much or more from corequisites

Positive impacts across corequisite models

- ALP model
- Extended course time model
- Required support service model (office hours, writing center)



## But how do we figure out what made these corequisites work?

## What are the "key ingredients" to a successful corequisite?

## We developed a framework based on the literature and practitioners perspectives

Informed by the theory and evidence from the literature on developmental education

Informed by interviews with administrators and faculty across 36 Texas community colleges in 2016-17

## We identified nine "key ingredients" (promising practices) for early coursework

1) Early opportunities to earn college credit (momentum)
2) Alignment of developmental education with college-level courses
3) Access to rigorous coursework and expectations
4) Intensity of practice on key academic skills
5) Access to student-centered instruction (e.g., differentiation, active learning)
6) Support in both reading and writing (ideally integrated)
7) Support for student success skills (e.g., study skills, self-efficacy, self-regulation)
8) Harnessing of peers to support learning
9) Limiting exposure to stigma around participation in DE

## There are two ways that "key ingredients" could be used to guide improvement

1) Use "key ingredients" as a guide/checklist to inform the design of corequisites

- ✓ Ensure early access to college courses
- ✓ Ensure alignment with college-level courses
- ✓ Ensure exposure to high level of rigor
- ✓ Ensure intensive time for skill practice
- ✓ Ensure student-centered learning
- ✓ Ensure integrated reading/writing support
- ✓ Ensure support for success skills
- ✓ Ensure use of peers to support learning
- ✓ Eliminate stigma associated with participation



## There are two ways that "key ingredients" could be used to guide improvement

1) Use "key ingredients" as a guide/checklist to inform the design of corequisites

2) Use "key ingredients" to determine what to measure as you assess success and improvement

Important to dig beneath course grades to inform improvement

## Let's look at peer learning as an example

| Key ingredient/promising practice: Using peers to enhance learning opportunities | |
|---|---|
| Ways to build the promising practice into corequisites | |
| Ways to measure progress on the promising practice | |



## A number of factors might help to enhance peer learning

| Key ingredient/promising practice: Using peers to enhance learning opportunities | |
|---|---|
| Ways to build the promising practice into corequisites | • Instructional practices that encourage peer learning (i.e., group work, peer editing, group discussion)<br>• Safe and collaborative environment<br>• Mixed student abilities<br>• Learning communities |
| Ways to measure progress on the promising practice | |

# There are also many ways to measure opportunities for peer learning

| Key ingredient/promising practice: Using peers to enhance learning opportunities | |
|---|---|
| Ways to build the promising practice into corequisites | • Instructional practices that encourage peer learning (i.e., group work, peer editing, group discussion)<br>• Safe and collaborative environment<br>• Mixed student abilities<br>• Learning communities |
| Ways to measure progress on the promising practice | • Student survey questions<br>  ○ "My instructor asked me to provide feedback on my classmates' work during class."<br>  ○ "Learning from other students helped me to be successful in the course."<br>• Other types of measures<br>  ○ Classroom observations, faculty surveys, focus groups to assess practices<br>  ○ Admin data on student test scores |

# Our study used a range of data sources to examine key ingredients

| | Admin Data | Student Survey | Faculty Survey | Obs | Course Docs | Focus groups |
|---|---|---|---|---|---|---|
| Early college credit | X | X | | | | X |
| Alignment of instruction | | X | X | | X | X |
| Rigorous instruction | | X | X | X | X | X |
| Intensity of practice | X | X | X | | | X |
| Student-centered learning | X | X | X | X | | X |
| Reading and writing support | | X | X | | | X |
| Support for success skills | | X | X | | | X |
| Harnessing peer learning | X | X | X | X | | X |
| Exposure to stigma | | X | | | | X |

## Activity: Using key ingredients to inform improvement

1) At each table, choose 1 of the 9 “key ingredients” where your college(s) could potentially make improvements

2) Identify at least 2 different aspects of a corequisite model that might help to build in a key ingredient

3) Identify at least 2 ways to measure whether a corequisite has the key ingredient



## Report out

1) Key ingredient where improvements might be needed

2) Two different aspects of a corequisite model that might help to build in a key ingredient

3) Two different ways to measure whether a corequisite has the key ingredient

## Some final thoughts

- May be room for improvement to our list of key ingredients
- Difficult to maximize all key ingredients, so colleges may need to prioritize
  - E.g., momentum conflicts with intensity
- Study findings suggest several areas where improvement efforts may be focused
  - Student-centered learning, ensuring support in both reading and writing, supporting other success skills



## Thank you!


**For questions or additional information:**
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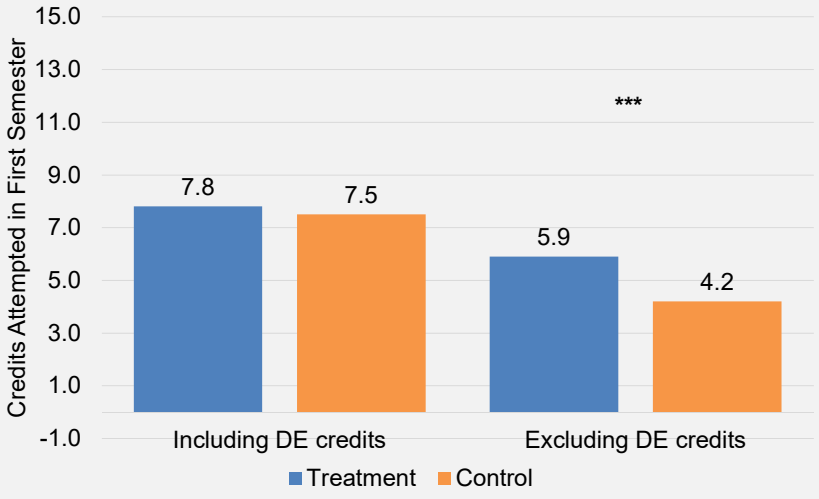
**Toolkit on corequisite continuous improvement:**
www.rand.org

# Results suggested clear differences in some areas, but not others

| Area of Potential Contrast | Findings |
|---|---|
| Momentum in earning college credit | **Strong evidence favoring corequisites** |
| Intensity of reading/writing practice | **Strong evidence favoring corequisites** |
| Rigor of coursework and instruction | **Moderate evidence favoring corequisites** |
| Alignment of course and DE support | **Moderate evidence favoring corequisites** |
| Peer learning | **Moderate evidence favoring corequisites** |
| Exposure to negative stigma | **Weak evidence favoring corequisites** |
| Student-centered learning | Mixed or null evidence |
| Reading and writing support | Mixed or null evidence |
| Success skill support | Mixed or null evidence |

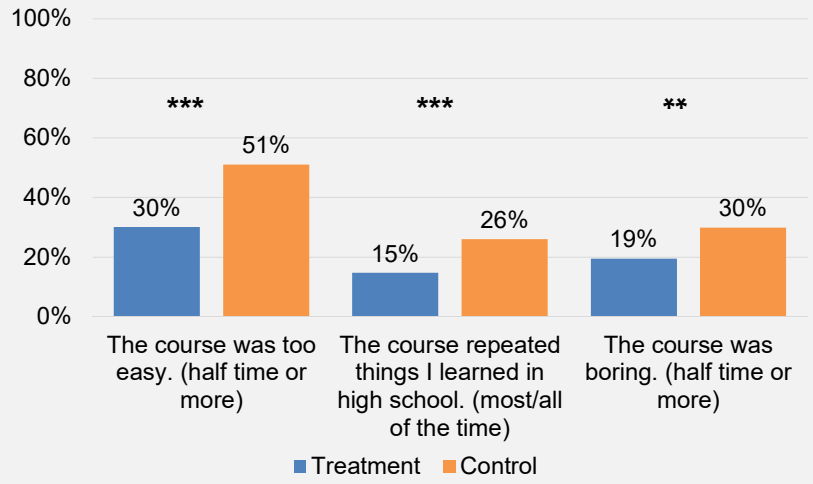


# Momentum: Corequisite students attempted more college credits




Notes: Data drawn from administrative records for cohorts 1-3. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

## Rigor: Corequisite students less likely to report course was easy, repetitive, boring



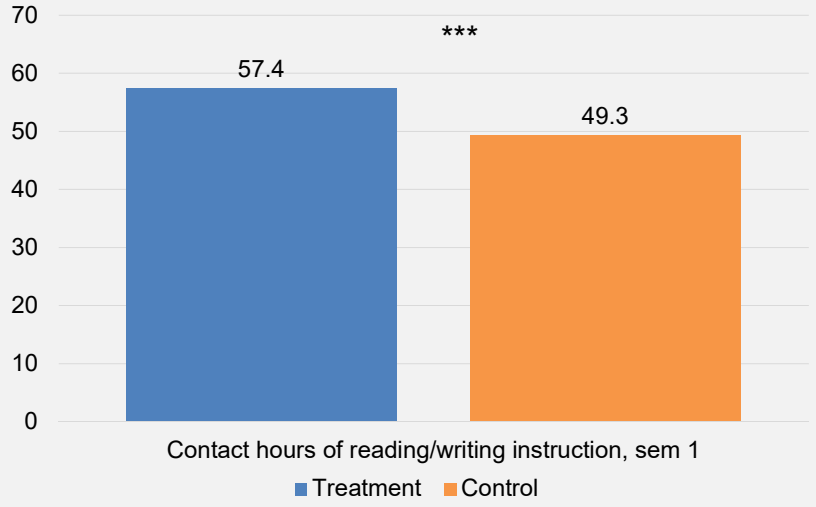

Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level



## Alignment: Content, instruction facilitates stronger alignment in corequisites

- Corequisite models highly aligned
  - 74% of instructors reported they work on English 1301 assignments in DE support
  - DE supports all used common textbook
  - 4 of 5 colleges used the same instructor, allowing for easy alignment
- Traditional DE also somewhat aligned
  - Learning objectives aligned at the state level
  - Evidence suggested strong overlap in types of assignments across DE and college courses

## Intensity: Corequisite students had more early reading/writing instructional hours




Notes: Data drawn from administrative records for cohorts 1-3. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

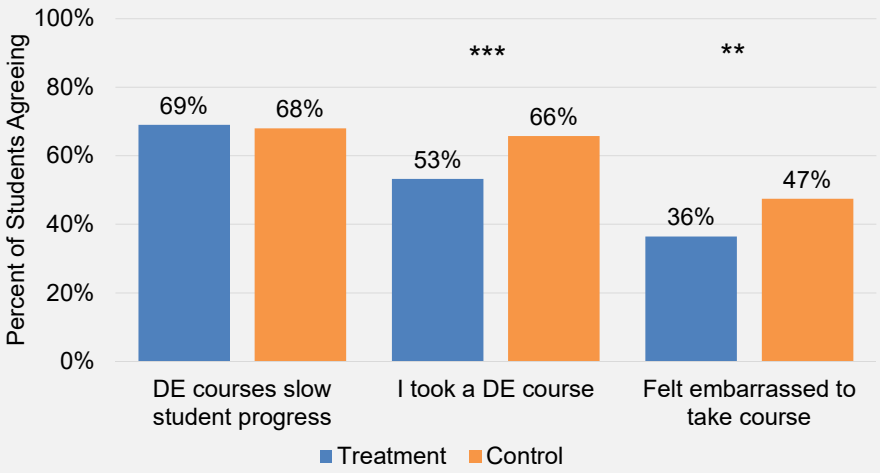


## Intensity: Average weekly contact hours varied by college

| | Corequisite | Traditional DE | Difference |
|---|---|---|---|
| College A | 6 hours | 5 hours | +1 hour |
| College B | 5 hours/3 hours | 4 hours | +1/-1 hour |
| College C | 4 hours | 4 hours | 0 |
| College D | 4 hours | 3 hours | +1 hour |
| College E | 7 hours/0 hours | 5.3 hours | +2.7/-5.3 hours |

Notes: Weekly hours of instruction from interviews and course documentation. When 2 numbers are listed, this signifies hours in the first 8 weeks/second 8 weeks.

## Stigma: Corequisite students less likely to feel embarrassed



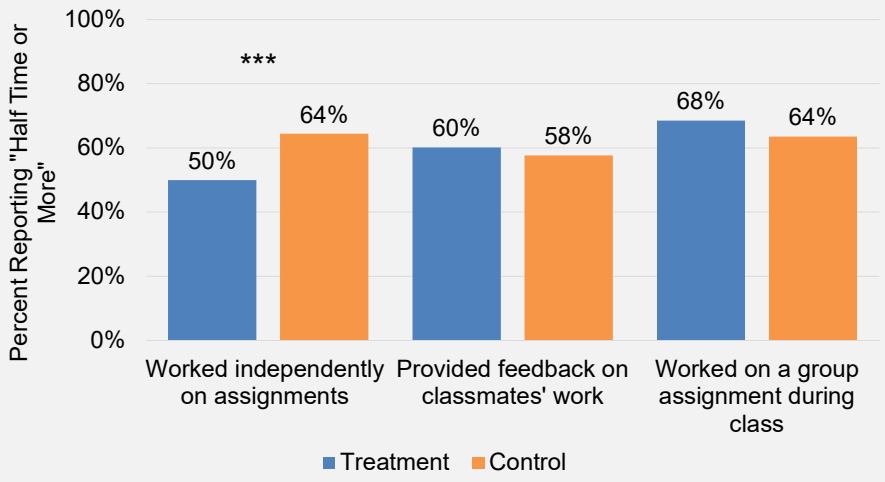

Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level



## Peer learning: Other evidence on peer learning contrast measures mixed

- Perceived support:
  - No difference in % of students reporting "I succeeded in course because other students helped me" (28% C vs 31% T)
  - Mentions of peer support in focus groups for both courses
- Course structure:
  - Corequisites students enrolled with higher-ability students in 4 of 5 colleges
  - Corequisite students in learning communities saw them as supportive

## Peer learning: Corequisite students less likely to work individual on assignments



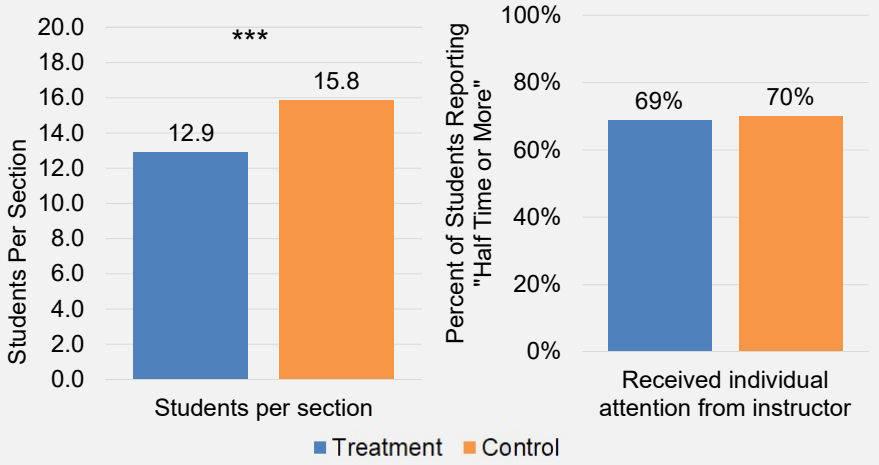

Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level



## Student-centered learning: We examined four aspects of student-centered learning

| | |
|---|---|
| Individualized support | Use of small class sizes and one-on-one interactions |
| Active learning approaches | Use of instructional strategies that encourage students to drive their learning (i.e., peer review, individualized desk work rather than lecture) |
| Differentiation | Tailoring of content or pacing to individual student needs |
| Contextualization | Linking basic skills instructions to concepts that are meaningful to students (e.g., pop culture examples) |

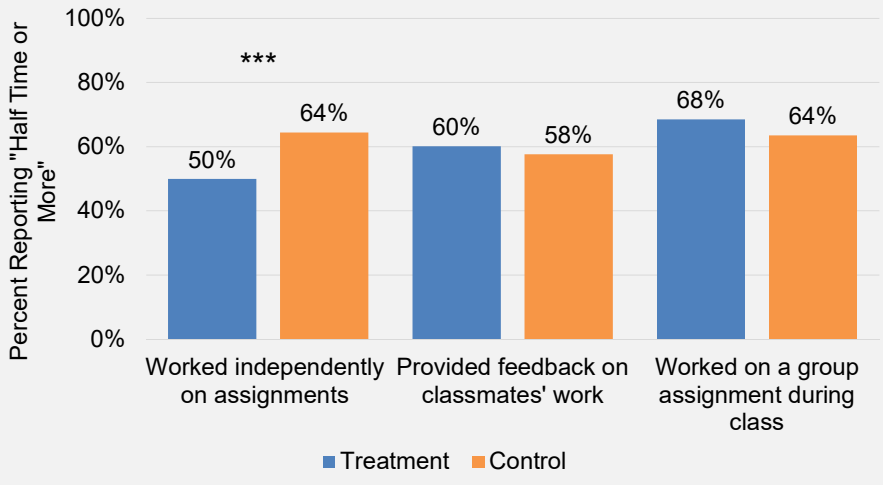
## Student-centered: Despite smaller class sizes, no more individualized instruction




Notes: Students per section drawn from administrative data, individual attention drawn from cohort 1 and 3 student surveys. For coreq course sizes, we calculated a weighted average of course and DE support. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

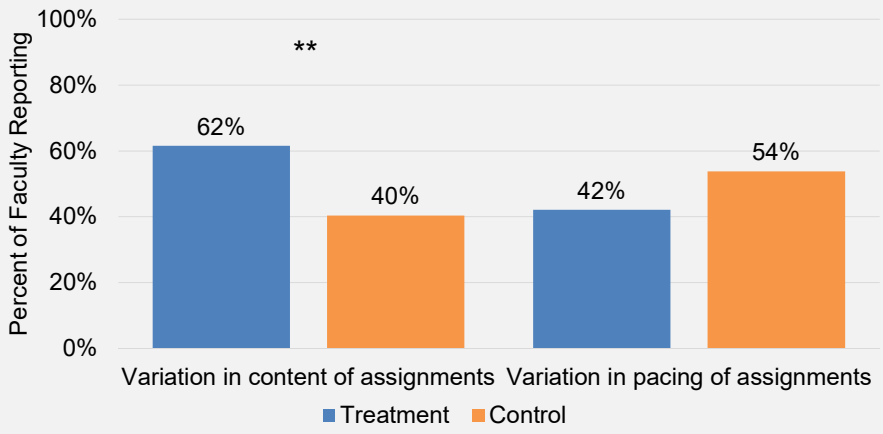


## Student-centered: Instructional strategies differed in corequisites




Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

## Student-centered: We found mixed evidence on differentiation



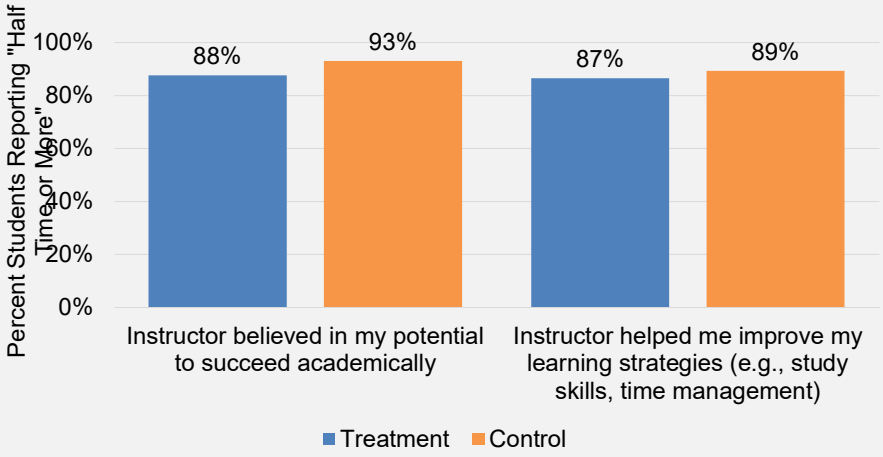

Notes: Data drawn from cohort 3 faculty surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level



## Reading/writing support: Limited and mixed evidence on reading support

- Some evidence that corequisites provided support in both areas
  - Evidence of reading and writing coursework in corequisites
  - Students equally likely to report receiving sufficient preparation in reading and writing for follow-on courses
  - Students equally likely to pass college-level reading course within 2 years
- But qualitative evidence suggesting limitations in reading support at some schools
  - Instructors less likely to consider need for reading support
  - Instructors more likely to report a lack of comfort/preparation in supporting reading
- A number of students in our study were college ready in reading

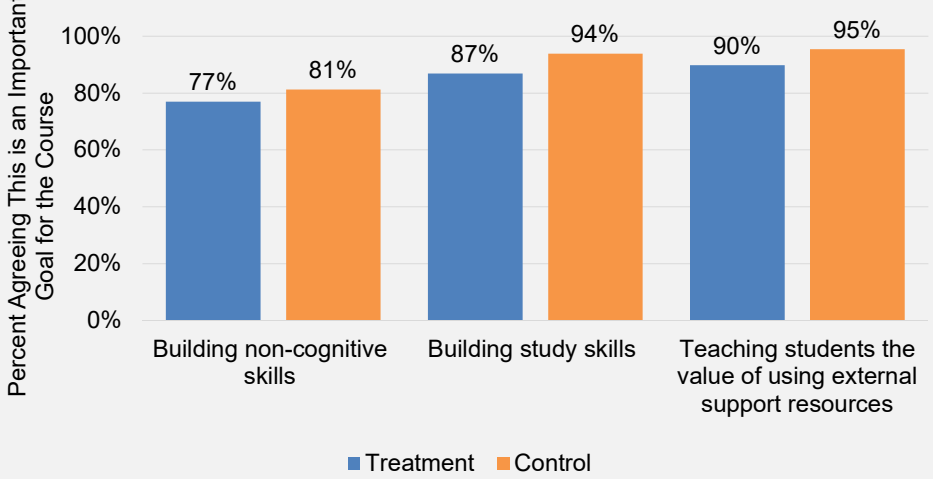
## Success skills: Students across both courses reported having support




Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

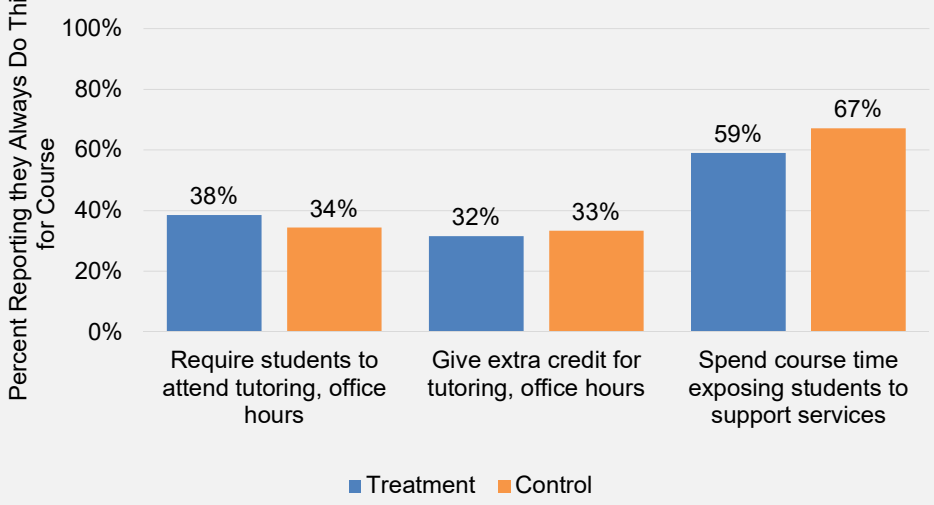


## Success skills: No major differences in instructor emphasis on success skills




Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level

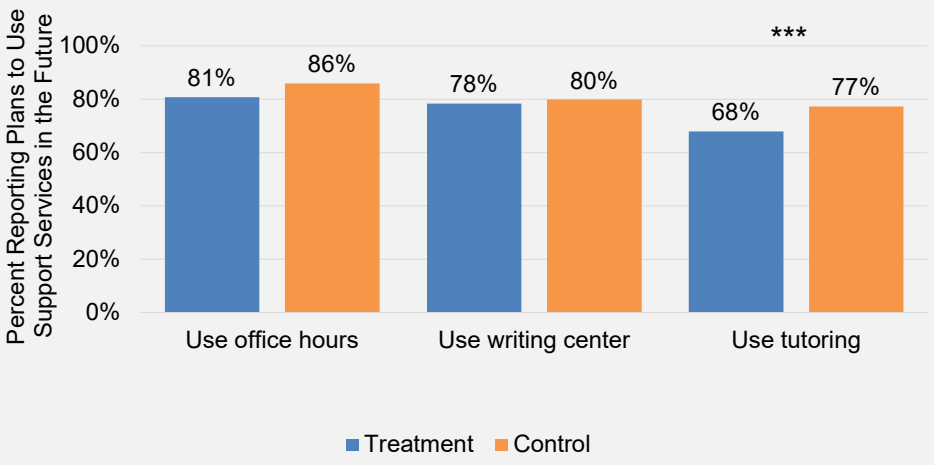
## Success skills: No major differences in emphasis on using academic support




Notes: Data drawn from cohort 1 and 3 student surveys. ***Significant at the p<0.01 level, ** at the p<0.05 level, * at the p<0.10 level



## Success skills: Corequisite students less likely to plan to use tutoring

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