COSUMNES RIVER COLLEGE

OFFICE OF RESEARCH & EQUITY

Spring 2022 Embedded Tutoring Implementation Evaluation

Report authored Summer 2022

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Executive Summary

The Spring 2022 Embedded Tutoring evaluation follows several years of outcomes evaluation of the Supplemental Instruction Program in Math and the Student Assistant Program in English. Evaluations in 2020-2021 and 2021-2022 were also impacted by predominantly remote instruction during the COVID-19 Pandemic, during which time the tracking systems established for the Embedded Tutoring Program were no longer viable. As a result of these changes in format, in addition to redundant findings of the outcomes evaluations, the present evaluation has evolved into a *program fidelity* or *implementation evaluation,* which seeks to investigate the techniques and implementation of the SI and SA Programs and to identify areas where program activities could be strategically aligned towards program outcome attainment. This evaluation relies on collaborative design; interviews with program coordinators, tutors, faculty, and students; classroom observations; as well as quantitative outcomes measures. Evaluation methods were conducted and analyzed separately for Math SI, English SA, ESL SA, and Extended Embedded Tutoring, and then findings were aggregated across all four programs to provide holistic recommendations for Embedded Tutoring more broadly at CRC.

Overall, the evaluation found that, while embedded tutoring may be a promising method for raising course success rates overall, it cannot be linked to a reduction of equity gaps in course success for participating students. For example, Math/Stat 300 courses saw a course success rate of 63.1% with an SI tutor and a course success rate of 48.5% without an SI tutor. At the same time, African American, Hispanic/LatinX, and Multi-Race students in courses served by an SI tutor face larger course success gaps than those in courses without a tutor. Similar equity gaps were found in English SA for Hispanic/Latinx students and the extended embedded tutoring courses for African American and Hispanic/Latinx students. The programmatic goal to close equity gaps in course success was explored further in faculty and tutor surveys. When asked to identify the objectives they felt belong in the embedded tutoring program, 81% of faculty selected *decrease equity gaps in course success*, while only 66% of embedded tutors selected the same goal. Whether because tutors were not aware of the goal, did not understand the meaning of the goal, or did not see the goal implemented in practice, they did not select the equity goal as often as faculty did.

As a result of the Spring 2022 evaluation, the Research & Equity Office recommends exploring how embedded tutoring at CRC might be adapted to help reduce equity gaps in course success for participating students. To do so, evaluators first recommend that the programs continue to clarify programmatic goals and related activities through dialogue with program and tutoring center coordinators. Evaluators found that program stakeholders were communicative and collaborative across departments and recommend continuing this collaboration in order to align programmatic goals with intentional activities. Additionally, any student equity-related goals should be communicated with both faculty and tutors, whether via training or other means.

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Introduction

Background

The Spring 2022 Embedded Tutoring evaluation follows several years of outcomes evaluation of the Supplemental Instruction Program in Math and the Student Assistant Program in English. As equity was elevated as an institutional priority, equity gaps were reported and identified in previous reports (Fall 2018, Spring 2019, Fall 2019). Evaluations in 2020-2021 and 2021-2022 were also impacted by predominantly remote instruction during the COVID-19 Pandemic, during which time the tracking systems established for the Embedded Tutoring Program were no longer viable. As a result of these changes in format, as well as the increased focus of the program on student equity, the present evaluation has evolved into a *program fidelity* or *implementation evaluation,* which seeks to investigate the techniques and implementation of the SI and SA Programs and to identify areas where program activities could better align with program outcomes or program design.

Methodology

This evaluation employs a methodology invariably known as a *program fidelity, implementation,* or *process evaluation*, which determines whether program activities have been implemented as intended'[1]. According to Breitenstein, Gross, Garvey, Hill, Fogg, and Resnick, "diminished fidelity may be why interventions that work well in highly controlled trials may fail to yield the same outcomes when applied in real life contexts."[2] Dane and Schneider established five ways in which program fidelity is measured:(1) adherence to the program, (2) dose (the amount of the program delivered), (3) quality of program delivery, (4) participant responsiveness and (5) program differentiation (whether critical features that distinguish the program are present).[3] This evaluation attempts to establish practices for method one, program adherence. The evaluation utilized collaborative design; interviews with program coordinators, tutors, faculty, and students; classroom observations; as well as quantitative outcomes measures. Evaluation methods were conducted and analyzed separately for Math SI, English SA, ESL SA, and Extended Embedded Tutoring, and then findings were aggregated across all four programs to provide holistic recommendations for Embedded Tutoring more broadly at CRC.

Findings

Faculty Researchers worked with the Math SI, English SA, and ESL SA Coordinators to develop a program logic model for each of these Embedded Tutoring programs. These logic models demonstrate the relationship between program inputs (resources), objectives, activities, and

[1] https://www.cdc.gov/std/program/pupestd/types%20of%20evaluation.pdf

[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3409469/#:~:text=Implementation%20fidelity%20is%20the%20degree,evidence%2Dbased%20interventions%20into%20practice.

[3] Dane, A. V. and Schneider, B. H. (1998) Program integrity in primary and early secondary prevention: are implementation effects out of control? *Clinical Psychology Review*, 18, 23–4.

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intended outcomes. The purpose of the Spring 2022 implementation evaluation is to identify areas where the program is successfully implemented, as well as areas where the program activities could be better aligned with its objectives and outcomes.

Overall, the evaluation found that, while embedded tutoring may be a promising method for raising course success rates overall, it cannot be linked to a reduction of equity gaps in course success for participating students. In investigating this theme, evaluators found that, for all four embedded tutoring programs, qualitative data reveal that there is a lack of consistency in implementation of the program goal to reduce equity gaps. When asked to identify the objectives they felt belong in the embedded tutoring program, 81% of faculty selected *decrease equity gaps in course success*, while only 66% of embedded tutors selected the same goal (see table below). Whether because tutors were not aware of the goal, did not understand the meaning of the goal, or did not see the goal implemented in practice, they did not select the equity goal as often as faculty did.

Please check all of the program objectives you feel belong to embedded tutoring:

Objective	***Faculty***	***Embedded Tutors***
Increase course success	96% (25)	94% (33)
Decrease equity gaps in course success	81% (21)	66% (23)
Meet students' tutoring needs	92% (24)	86% (30)
Help students understand and apply course content	92% (24)	94% (33)
Help students feel more comfortable and confident in their courses (not asked on ESL survey)	58% (15)	77% (27)
Increase the number of students using tutoring (not asked on ESL survey)	50% (13)	46% (16)

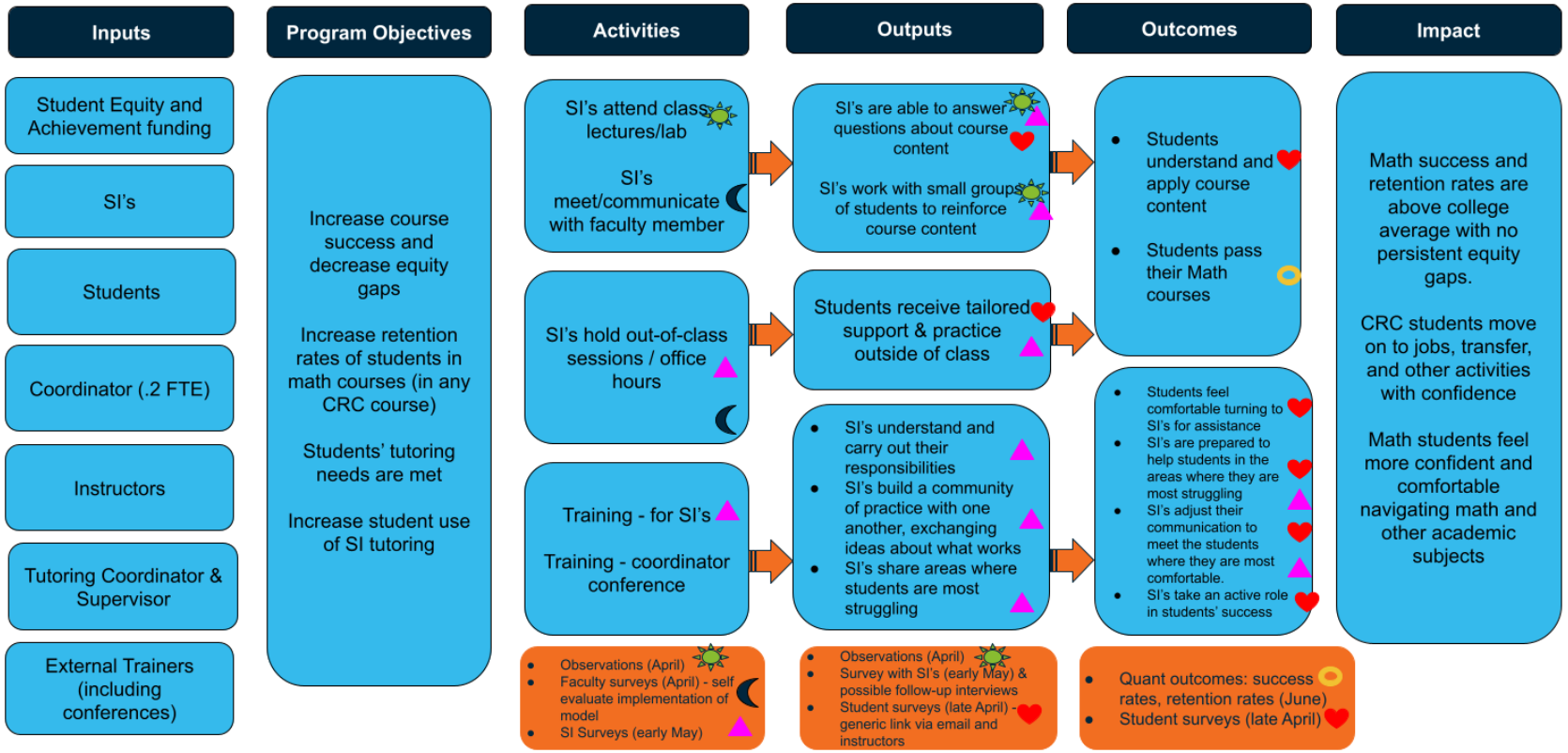
As a result of the Spring 2022 evaluation, the Research & Equity Office recommends exploring how embedded tutoring at CRC might be adapted to help reduce equity gaps in course success for participating students. To do so, evaluators first recommend that the programs continue to clarify programmatic goals and related activities through dialogue with program and tutoring coordinators. Evaluators found that program stakeholders were communicative and collaborative across departments and recommend continuing this collaboration in order to align programmatic goals with intentional activities. Additionally, any student equity-related goals should be communicated with both faculty and tutors, whether via training or other means.

Math Supplemental Instruction Program

Program Goals

Faculty Researchers worked with the SI Coordinator to develop a program logic model for the Supplemental Instruction Program. The below logic model demonstrates the relationship between program inputs (resources), objectives, activities, and intended outcome. The purpose of the Spring 2022 implementation evaluation is to identify areas where the program is successfully implemented, as well as areas where the program activities could be better aligned with its objectives and outcomes.

Spring 2022 Math SI Logic Model



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Math Success Outcomes

The Math SI Program officially served MATH 300, STAT 300, and STAT 100 students. However, only MATH 300 and STAT 300 had sections with both a treatment and non-treatment group. MATH/STAT 300 courses with an SI tutor present showed a significant difference in course success (63.1% vs 48.5%, $p < 0.01$). However, there was no significant difference in fall persistence rates. With respect to equity gaps[4] African American students (percentage point gap of -32%), Hispanic/LatinX (percentage point gap -9.9%) and Multi-Race students (percentage point gap -19%) experienced larger equity gaps when SI tutors were present. This is an indicator that the SI tutor intervention is working very well for certain groups of students, causing an overall increase in success, but still disproportionately impacting other groups of students.

MATH SI Course Success (Chi-Square = 16.77, df = 1, $p < 0.01$)

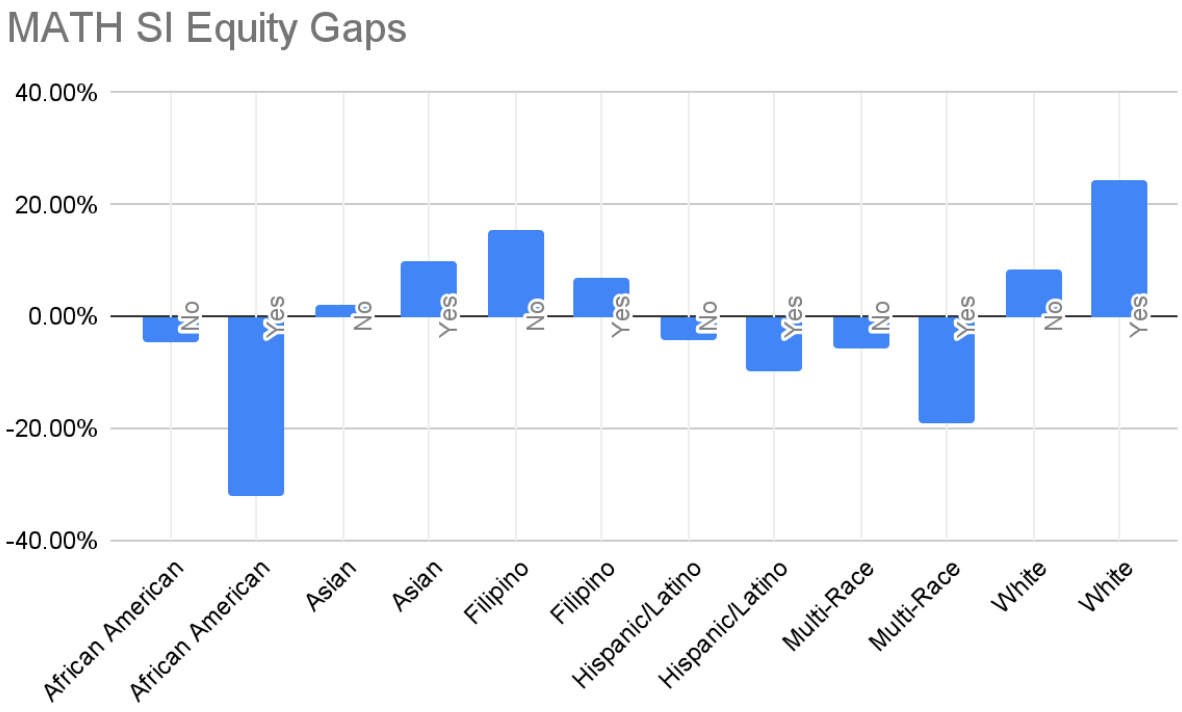
Course	***With SI***	***Without SI***
MATH 300 and STAT 300	63.1% (355)	48.5% (468)

MATH SI Student Persistence into Fall (Chi-Square = 0.484, df = 1, $p > 0.05$)

Course	***With SI***	***Without SI***
MATH 300 and STAT 300	61.4% (355)	58.8% (468)

MATH SI - Equity Gaps (Yes = SI Tutor, No = No SI Tutor)

[4] Definition of Equity Gap: The equity gap is a percentage point gap between the course success of a subgroup with treatment and the course success of the entire group with treatment. For example, the course success rate of African American students in Math courses with an SI Tutor is 31.03%, the course success rate of Math courses with an SI Tutor is 63.1%, so the equity gap for African American students is 31.03 - 63.1 = -32.07%. Note equity gaps are reported only for subgroups with N greater than 10.



MATH SI - Table of Equity Gaps

Race/Ethnicity	SI Tutor	Course Success	n	Equity Gap
African American	No	44.00%	50	-4.50%
African American	Yes	31.03%	29	-32.06%
Asian	No	50.45%	111	1.95%
Asian	Yes	72.90%	107	9.80%
Filipino	No	64.00%	25	15.50%
Filipino	Yes	70.00%	30	6.90%
Hispanic/Latino	No	44.44%	153	-4.06%
Hispanic/Latino	Yes	53.21%	109	-9.89%
Multi-Race	No	42.86%	42	-5.65%
Multi-Race	Yes	44.00%	25	-19.10%
White	No	56.96%	79	8.46%
White	Yes	87.50%	48	24.40%

Math Survey Findings

Four Math faculty members responded to the Spring 2022 Math SI Faculty Survey, 50% of the Math SI faculty leaders. Five Math SI Tutors responded to the Spring 2022 Math SI Tutor Survey, 71% of Math SI tutors. Three of the four faculty members who responded also had at least one tutor respond to the survey, meaning that the experiences of tutor and faculty

respondents in the SI program can be generally compared. The surveys found similarities and differences in the ways that Math faculty and SI tutors perceive and implement the Supplemental Instruction program.

The surveys first asked faculty and tutors to identify the objectives they feel belong to the SI Program. Faculty and tutors who responded to the surveys generally agreed that *Increase course success in Math/Stat courses*, *Math/Stat students understand and apply course content*, *Math/Stat students feel more comfortable and confident in their Math/Stat courses*, and *Meet Math/Stat students' tutoring needs* were all program objectives. However, 75% of faculty respondents said that *Decrease equity gaps in course success in Math/Stat courses* was an objective of the SI program, while only 20% of student respondents identified this objective.

Please check all of the program objectives you feel belong to the Math/Stat SI Program

Objective	***Faculty***	***SI Tutors***
Increase course success in Math/Stat courses	100% (4)	100% (5)
Decrease equity gaps in course success in Math/Stat courses	75% (3)	20% (1)
Meet Math/Stat students' tutoring needs	100% (4)	80% (4)
Math/Stat students understand and apply course content	100% (4)	100% (5)
Math/Stat students feel more comfortable and confident in their Math/Stat courses	100% (4)	100% (5)
Increase the number of students using SI tutoring	75% (3)	60% (3)
Other	0% (0)	0% (0)

What did your training cover?

Training Topic	***SI Tutors***
Teaching/tutoring methods	80% (4)
Sharing tutoring strategies with other SI tutors	100% (5)
Logistics/requirements of the SI position (getting paid, turning in time sheets, responsibilities)	100% (5)
Learning about areas of Math/Stat where students struggle the most	20% (1)
Other	0% (0)

Generally, SI tutors and faculty agree on the skills/qualities that are most important in an SI tutor. They most often cite *empathy* and *teaching/tutoring skills.* Fewer SI tutors than faculty think that *a very good master of Math/Stat topics* is important to the role of the SI tutor.

What are the skills/qualities that you think are important to be a Math/Stat SI tutor?

Skill/quality	***Faculty***	***SI Tutors***
Having passed the Math/Stat course previously	50% (2)	80% (4)
A very good mastery of Math/Stat topics	75% (3)	40% (2)
Being able to empathize with Math/Stat students' experiences	100% (4)	100% (5)
Teaching/tutoring skills	75% (3)	100% (5)
Other: *Being able to relate to the students and send referrals back to instructor for course planning to meet most students' needs* *Professionalism*	50% (2)	0% (0)

SI tutors and faculty were asked how often they typically communicate with one another outside of class and what they typically discuss. Tutors and faculty generally said that they communicate once per week on average. When analyzing the topics they say they most often discussed, researchers noticed a differentiation between *logistics* and *holistics*. *Logistics* refers to the details related to course organization and timeline, technical support, and other logistical items. *Holistics* refers to details related to how students are responding to course material and teaching and/or tutoring nuances geared toward serving the students. Both tutors and faculty said they more often discussed *logistics* than *holistics*, though more tutors than faculty mentioned *holistics.*

What do you typically discuss with your instructor/SI?

Theme	***Faculty***	***SI Tutors***
Logistics	100% (4)	60% (3)
Holistics	25% (1)	40% (2)

Logistics v. Holistics

Examples of the logistics theme	***Examples of the holistics theme***
How attendance in office hours is going. *I typically will just discuss clarifications on due dates or test days.* *Expectations, questions, and issues.*	*I will relay a question or concern a student has that I may not have the answer to.* *What contents students struggle with the most.* *Class understanding of topics.*

What we will be doing in the upcoming days.	

SI tutors generally feel that they are prepared to help students and that students are comfortable asking them for help. They less often agree with the statement *I play an active role in student success.*

How much do you agree with the following statements? (just for tutors)

Statement	***Mean (5 = high agreement, 1= low agreement)***
Students feel comfortable asking me for help	4
I feel prepared to help students in the areas where they are most struggling	4.8
I adjust my communication to meet the students where they are most comfortable	4.8
I play an active role in students' success	3.8

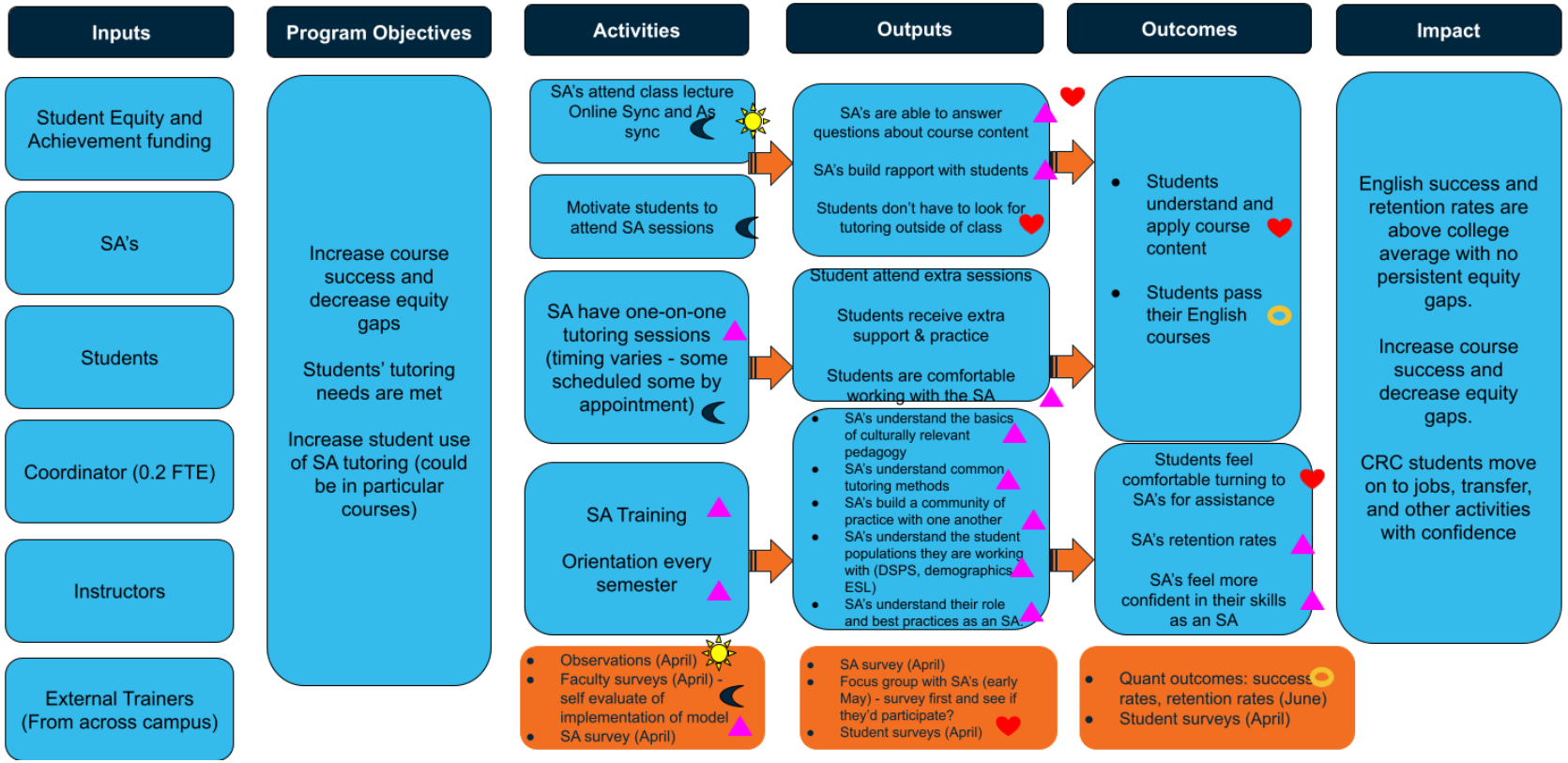
SI tutors and faculty were asked, "In an ideal, resource-rich world, is there anything you would like to see changed and/or added to the Math/Stat SI Program that you feel would contribute to its objectives?" In response, tutors cited resources for students, such as calculators and book loaners (1), more out-of-class time spent with students (1), and increased training (1). One faculty member said they could not think of any enhancements, while another said they would like tutors to have more teaching and explanation skills, as opposed to just content mastery.

English Student Assistant Program

Program Goals

Faculty Researchers worked with the English SA Coordinator to develop a program logic model for the Student Assistant Program. The below logic model demonstrates the relationship between program inputs (resources), objectives, activities, and intended outcome. The purpose of the Spring 2022 implementation evaluation is to identify areas where the program is successfully implemented, as well as areas where the program activities could be better aligned with its objectives and outcomes.

Spring 2022 English SA Logic Model



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English Course Success Outcomes

The English SA Program officially served the ENGWR 108, ENGWR 110, ENGWR 300, and ENGRD 310 students. However, only ENGWR 108 and ENGWR 300 had sections with both a treatment and a non-treatment group. The difference in course success rate when an SA tutor is present in English courses (54.4% with SA vs. 55.9% without SA) was not statistically significant. However, there is a statistically significant difference between the fall persistence rates of English courses with an SA versus without and SA (60.2% vs. 47.8%, $p<0.01$). These findings suggest that further analysis may be needed to track students' usage of the SA tutor (which students attended outside SA sessions as in previous years' reports) more so that the presence of an SA in a course section (a limitation of the present study). Additionally, the significant difference in fall persistence suggests that students may have practices present with an SA that help students decide to enroll in future semesters or help students more proactively enroll in the following semester (such as assistance from the SA about which course to take next).

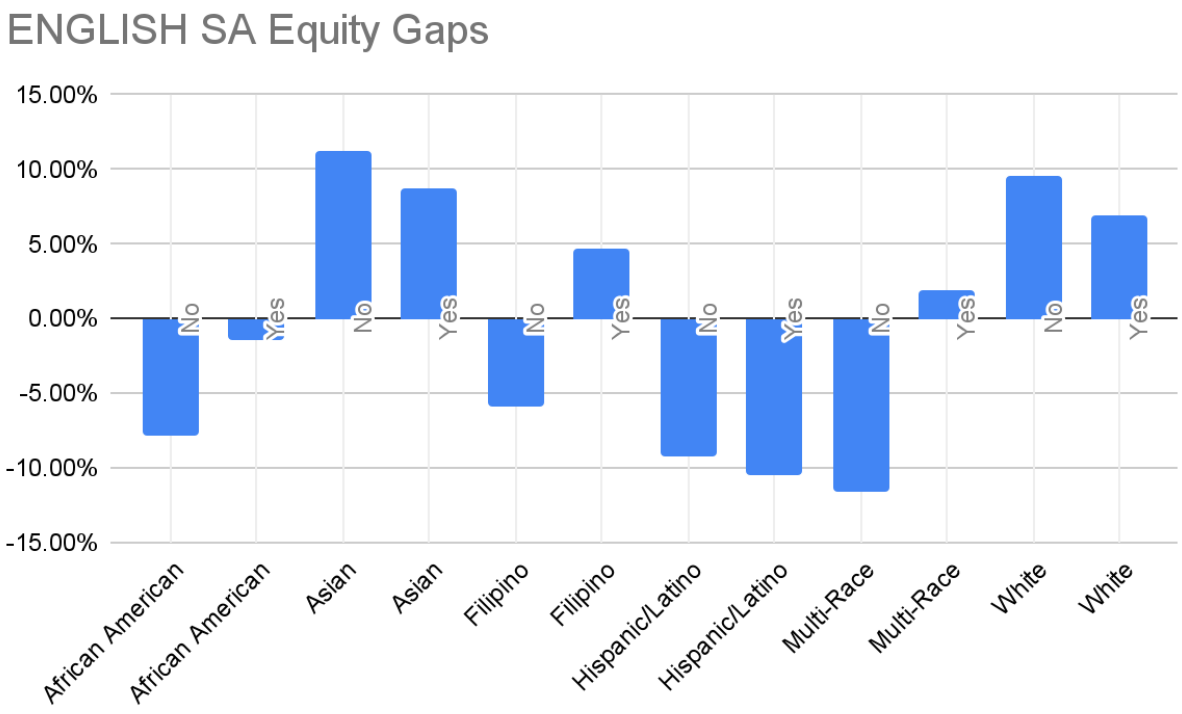
English SA Course Success (Chi-Square = 0.249, df = 1, $p>0.05$)

Course	***With SA***	***Without SA***
ENGWR 108, 300	54.4% (655)	55.9% (646)

English SA Student Persistence into Fall (Chi-Square = 19.38, df = 1, $p<0.01$)

Course	***With SA***	***Without SA***
ENGWR 108, 300	60.2% (655)	47.8% (646)

ENGLISH SA - Equity Gaps (Yes = SA Tutor, No = No SA Tutor)



ENGLISH SA - Table of Equity Gaps

Race/Ethnicity	SA Tutor	Course Success	n	Equity Gap
African American	No	48.05%	77	-7.83%
African American	Yes	52.94%	68	-1.41%
Asian	No	67.14%	140	11.26%
Asian	Yes	63.03%	165	8.68%
Filipino	No	50.00%	26	-5.88%
Filipino	Yes	59.09%	44	4.74%
Hispanic/Latino	No	46.67%	195	-9.22%
Hispanic/Latino	Yes	43.84%	203	-10.51%
Multi-Race	No	44.23%	52	-11.65%
Multi-Race	Yes	56.25%	48	1.90%
White	No	65.47%	139	9.59%
White	Yes	61.21%	116	6.86%

English Survey Findings

9 English faculty members responded to the Spring 2022 English SA Faculty Survey, 50% of the English SA faculty leaders. 13 English student assistants responded to the Spring 2022 English

SA Tutor Survey, 65% of English SA's. Eight of the nine responding faculty members also had at least one tutor respond to the survey, meaning that the experiences of tutor and faculty respondents in the SA program can be generally compared. The surveys found similarities and differences in the ways that English faculty and student assistants perceive and implement the Student Assistant program.

The surveys first asked faculty and tutors to identify the objectives they feel belong to the SA Program. Faculty and tutors who responded to the surveys generally agreed that *Increase course success in English courses* and *English students understand and apply course content*. However, 78% of faculty respondents said that *Decrease equity gaps in course success in English courses* was an objective of the SA program, while only 46% of tutor respondents identified this objective. Conversely, 85% of tutor respondents identified the objective *English students feel more comfortable and confident in their English courses*, while 67% of faculty respondents identified that goal. Generally, less than 70% of faculty and tutor respondents identified the goal to *Increase the number of students using SA tutoring*. One faculty member added the goal *Help students understand the process to writing* and one tutor added the goals *To make students feel more comfortable reaching out for help. To connect the course and staff to students in a more personable and attainable way.*

Please check all of the program objectives you feel belong to the English SA Program

Objective	***Faculty***	***Student Assistants***
Increase course success in English courses	100% (9)	85% (11)
Decrease equity gaps in course success in English courses	78% (7)	46% (6)
Meet English students' tutoring needs	78% (7)	92% (12)
English students understand and apply course content	89% (8)	92% (12)
English students feel more comfortable and confident in their English courses	67% (6)	85% (11)
Increase the number of students using SA tutoring	67% (6)	54% (7)
Other	11% (1) Help students understand the process to writing	8% (1) To make students feel more comfortable reaching out for help. To connect the course and staff to students in a more personable and attainable way.

The surveys had faculty and tutor respondents identify the ways in which they advertise the SA program to students. Faculty and tutors generally identified the same methods. Both groups identified Canvas announcements as the most common way they advertised to students, while mandatory attendance was cited the least. Extra credit was cited by at least half of all faculty and tutor respondents.

In what ways do you and/or your instructor advertise/encourage students to attend any outside of class SA sessions?

Method	***Faculty***	***Student Assistants***
Canvas announcements	89% (8)	92% (12)
Course syllabus	78% (7)	69% (9)
Classroom or Zoom announcements	78% (7)	69% (9)
Emails	89% (8)	69% (9)
Individual referrals	89% (8)	54% (7)
Extra credit	56% (5)	54% (7)
Students are required to attend SI sessions as a mandatory part of their grade	44% (4)	39% (5)
Other	0% (0)	0% (0)
I do not have sessions outside of class	0% (0)	8% (1)

12 student assistants said that they received some kind of training, while one said that they did not. Of the 12 who received training, the majority said their training covered *teaching/tutoring methods, sharing tutoring strategies with other SA tutors, Logistics/requirements of the SA position, Learning about areas of English where students struggle the most,* and *Culturally relevant teaching and learning.* Four tutors said their training covered *Understanding the various student populations we serve (DSPS, ESL, other demographic groups).*

What did your training cover?

Training Topic	***Student Assistants***
Teaching/tutoring methods	100% (12)
Sharing tutoring strategies with other student assistants	67% (8)
Logistics/requirements of the SA position (getting paid, turning in time sheets, responsibilities)	67% (8)
Learning about areas of English where students struggle the	58% (7)

most	
Culturally relevant teaching and learning	58% (7)
Understand the various student populations we serve (DSPS, ESL, other demographic groups)	33% (4)
Other	8% (1) Stress management Challenging student behavior

Generally, student assistants and faculty agree on the skills/qualities that are most important in a student assistant. They most often cite *empathy* and *having passed the English course previously.* Fewer faculty than tutors think that *a very good master of English topics* and *teaching/tutoring skills* are important to the role of the student assistant. One faculty member added *communication skills*

What are the skills/qualities that you think are important to be an English SA?

Skill/quality	***Faculty***	***Student Assistants***
Having passed the English course previously	78% (7)	100% (13)
A very good mastery of English topics	67% (6)	85% (11)
Being able to empathize with English students' experiences	100% (9)	92% (12)
Teaching/tutoring skills	78% (7)	100% (13)
Other:	11% (1) Communication (1)	15% (2) Patience (1) Soft skills (1)

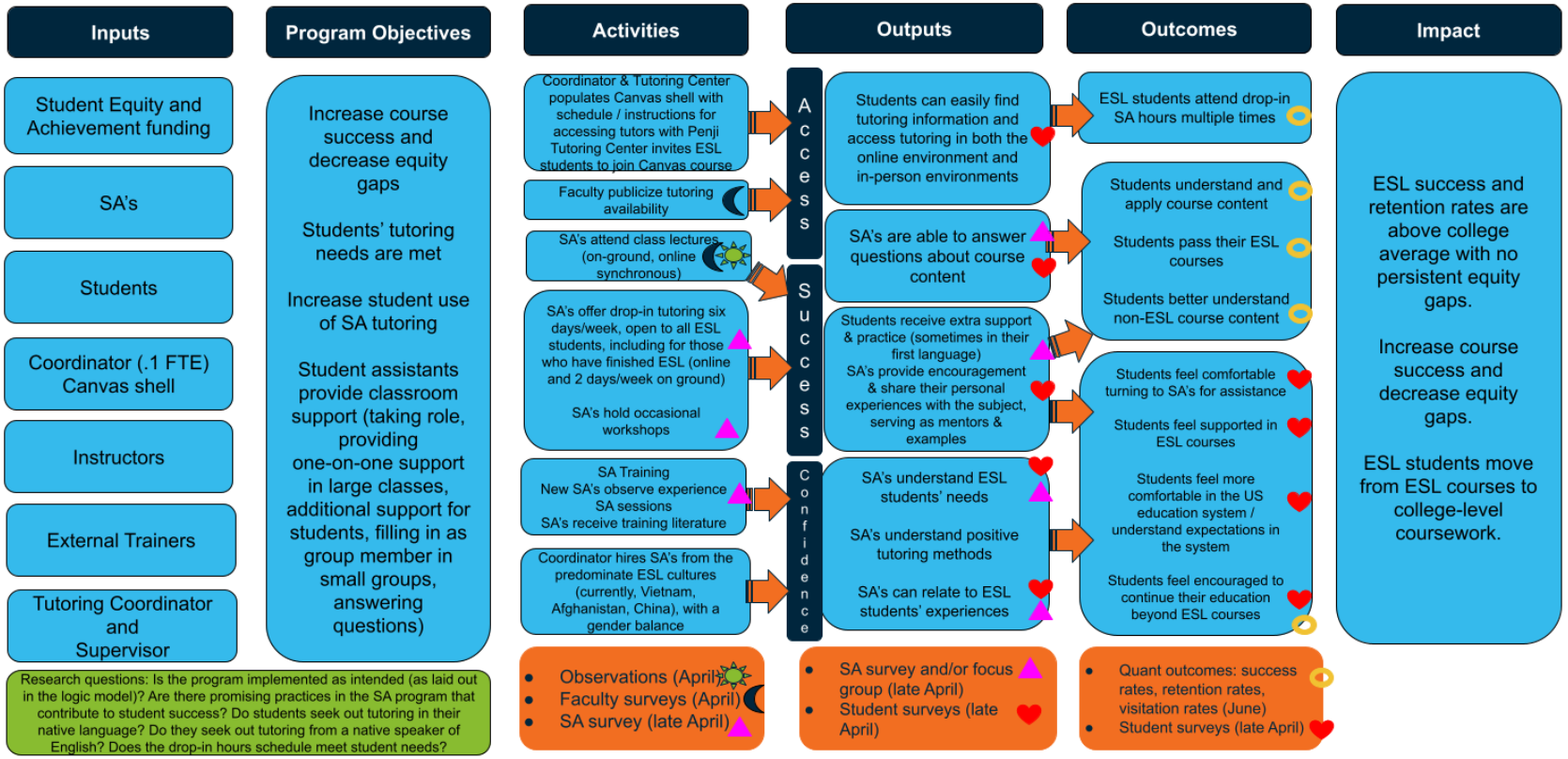
SA's and faculty were asked, "In an ideal, resource-rich world, is there anything you would like to see changed and/or added to the English SA Program that you feel would contribute to its objectives?" In response, tutors cited increased or specific training (3), increased hands-on learning for students (1), tutor-led subject matter workshops (1), and a dedicated space for the program (1). Faculty cited embedded counseling (1), increased incentives for tutors (1), more out-of-class time with tutors (1), increased SA offerings for online courses (1), and increased training for tutors (1).

ESL Student Assistant Program

Program Goals

Faculty Researchers worked with the ESL SA Coordinator to develop a program logic model for the ESL Student Assistant Program. The below logic model demonstrates the relationship between program inputs (resources), objectives, activities, and intended outcome. The purpose of the Spring 2022 implementation evaluation is to identify areas where the program is successfully implemented, as well as areas where the program activities could be better aligned with its objectives and outcomes.

Spring 2022 ESL SA logic model



ESL Course Success Outcomes

The ESL SA Program officially served students enrolled in ESL 27, 37, 47, 110, 130, ESLG 31, 41, 110, 120, ESLL 41, 111. However, only ESL 27, 37, 110, ESLG 31, 41, and ESLL 41 had sections with both a treatment and a non-treatment group. For the ESL SA courses with both a treatment and non-treatment group, the overall course success rate with an SA tutor was below the course success rate without an SA tutor (73.6% vs 83.7%), however, these results were not shown to be statistically significant. This could be due to a smaller number of students present in the courses and additional qualitative research may provide insights into the differences in instructional practices that could explain these differences in course success rates. The fall persistence rate for students in courses without an SA was also higher than for students in courses with an SA. This result was statistically significant and may also be worthy of a qualitative follow up to determine an explanation for these differences.

Unfortunately, equity gaps could not be calculated, low N values in the various Race/Ethnicity groups enrolled in ESL courses. Reported below in Table Z are the demographics of the ESL cohort with N>10. In the future, disaggregation of the Asian race/ethnicity group may allow for more categorization to allow for an equity gap calculation to provide meaningful insights.

ESL/ESLG/ESLL SA Course Success (Chi-Square = 3.14, df = 1, p>0.05)

Course	***With SA***	***Without SA***
ESL 27, 37, 110, ESLG 31, 41, ESLL 41	73.6% (110)	83.7% (135)

ESL SA Student Persistence into Fall (Chi-Square = 5.96, df = 1, p<0.05)

Course	***With SA***	***Without SA***
ESL 27, 37, 110, ESLG 31, 41, ESLL 41	62.7% (110)	77.8% (135)

ESL SA Demographics Representation by Race/Ethnicity (n>10)

ESL SA with Treatment				**ESL SA without Treatment**		
Race/Ethnicity	**n**	**Representation**		**Race/Ethnicity**	**n**	**Representation**
Asian	85	77.27%		Asian	107	79.26%
Hispanic/Latino	10	9.09%		Hispanic/Latino	10	7.41%
White	13	11.82%		White	13	9.63%

ESL Survey Findings

6 ESL faculty members responded to the Spring 2022 English SA Faculty Survey, 75% of the English SA faculty leaders. 6 ESL student assistants responded to the Spring 2022 English SA Tutor Survey, 75% of ESL SA's. Four of the six responding faculty members also had at least one tutor respond to the survey, meaning that the experiences of tutor and faculty respondents in the ESL SA program can be generally compared. The surveys found similarities and differences in the ways that ESL faculty and student assistants perceive and implement the ESL Student Assistant program.

The surveys first asked faculty and tutors to identify the objectives they feel belong to the SA Program. Faculty and tutors who responded to the surveys generally agreed that *Increase course success in ESL courses*, *Meet ESL students' tutoring needs,* and *ESL students feel supported in their courses* are goals of the program. However, 83% of faculty respondents said that *Decrease equity gaps in course success in ESL courses* was an objective of the SA program, while only 67% of tutor respondents identified this objective. Conversely, 83% of tutor respondents identified the objective *English students feel more comfortable in the U.S. education system/understand expectations in the U.S. education system*, while 67% of faculty respondents identified that goal. Generally, less than 70% of faculty and tutor respondents identified the goal that *ESL students feel encouraged to continue their education beyond ESL courses*. One faculty member added the goal *Increase sense of community*, and another added *Provide opportunities for students to practice and remember course content.*

Please check all of the program objectives you feel belong to the ESL SA Program

Objective	***Faculty***	***Student Assistants***
Increase course success in ESL courses	83% (5)	100% (6)
Decrease equity gaps in course success in ESL courses	83% (5)	67% (4)
Meet ESL students' tutoring needs	100% (6)	100% (6)
ESL students understand and apply course content	83% (5)	83% (5)
ESL students feel supported in their courses	83% (5)	100% (6)
ESL students feel more comfortable in the U.S. education system/understand expectations in the U.S. education system	67% (4)	83% (5)
ESL students feel encouraged to continue their education beyond ESL courses	67% (4)	67% (4)
Other	50% (3)	0% (0)

	Increase sense of community (1) Provide opportunities for students to practice and remember course content (1)	

The surveys had faculty and tutor respondents identify the ways in which they advertise the SA program to students. Faculty and tutors generally identified the same methods. Both groups identified Canvas announcements and Classroom/Zoom announcements as the most common way they advertised to students, while mandatory attendance was cited the least. Extra credit was cited by all ESL faculty, but only one student assistant.

100% of the ESL student assistants said that they received some kind of training. Five said their training covered *Logistics/requirements of the SA position* and *Learning from experienced SA's,* and four said their training covered *teaching/tutoring methods* and *working with students from different cultures/experiences*. Students did not offer any other topics their training covered.

What did your training cover?

Training Topic	***Student Assistants***
Teaching/tutoring methods	67% (4)
Working with students from different cultures/experiences	67% (4)
Logistics/requirements of the SA position (getting paid, turning in time sheets, responsibilities)	83% (5)
Learning from experienced SA's	83% (5)

Generally, student assistants and faculty agree on the skills/qualities that are most important in a student assistant. Because it was one of the goals cited in the logic model, faculty were presented with the option *represents my students' cultural or linguistic background*. Only 50% of faculty selected this quality; it was not an option on the tutor survey.

What are the skills/qualities that you think are important to be an English SA?

Skill/quality	***Faculty***	***Student Assistants***
Having taken an ESL course at CRC	83% (5)	83% (5)
A very good mastery of the English language	67% (4)	67% (4)
Being able to empathize with ESL students' experiences	83% (5)	83% (5)
Teaching/tutoring skills	83% (5)	100% (6)

Represents my students' cultural or linguistic background	50% (3)	Not an option
Other:	17% (1) Reliable and responsible, friendly and out-going	17% (1) Technology skills, understand about financial aid, courses requirements, etc.

ESL tutors and faculty were asked how often they typically communicate with one another outside of class and what they typically discuss. Tutors and faculty generally said that they communicate once per week on average. When analyzing the topics they say they most often discussed, researchers noticed a differentiation between *logistics* and *holistics*. *Logistics* refers to the details related to course organization and timeline, technical support, and other logistical items. *Holistics* refers to details related to how students are responding to course material and teaching and/or tutoring nuances geared toward serving the students. Both tutors and faculty said they more often discussed *logistics* than *holistics*, though more faculty than tutors mentioned *holistics.*

What do you typically discuss with your instructor/SI?

Theme	***Faculty***	***Student Assistants***
Logistics	100% (6)	50% (3)
Holistics	50% (3)	17% (1)

Logistics v. Holistics

Examples of the logistics theme	***Examples of the holistics theme***
How to organize breakout rooms *Class plans* *Attendance*	*Course content and student progress* *We model small talk at the start of class* *Students to reach out to*

Faculty were asked, "In an ideal, resource-rich world, is there anything you would like to see changed and/or added to the ESL SA Program that you feel would contribute to its objectives?" In response, they cited increased tutor diversity (1), tutor-led content workshops (1), and native English speakers in the SA role (1).

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Extended Embedded Tutoring

Extended Embedded Tutoring Course Success Outcomes

The Extended Embedded Tutoring Program officially served students enrolled in CHEM 420, CHEM 421, ECE 300, ENGCW 400, ENGLT 311, ENGWR 301, HSER 300, HSER 302, HUM 310, HUM 320, HUM 331, MATH 120, MATH 335, MATH 341, PSYCH 356. However, only ECE 300, ENGWR 301, HSER 302, MATH 120, MATH 335, MATH 341, and PSYC 356 had sections with both a treatment and a non-treatment group.

The Extended Embedded Tutoring did not see significant differences between the presence of an embedded tutor or not in both course success and fall persistence rates. Separating by departments may reveal differences in course success or fall persistence rates, but with a limited number of course sections this disaggregation may break the confidentiality of the course and instructor. Due to this limitation it is challenging to draw any particular conclusions at this time. A qualitative investigation may provide further insight into the instructional practices to help understand the reasons for seeing no difference in course success outcomes.

An overview of the equity gap calculation reveals that African American, Hispanic/Latinx, and Multi-Race students are experiencing equity gaps. In the case of African American and Hispanic/Latinx students, the equity gap is larger when a tutor is present. These results suggest that while the program is keeping the course success rates the same on average, these groups of students are not benefiting from the program in the same way as their peers. An investigation into the practices utilized around the tutors may reveal how these equity gaps come about.

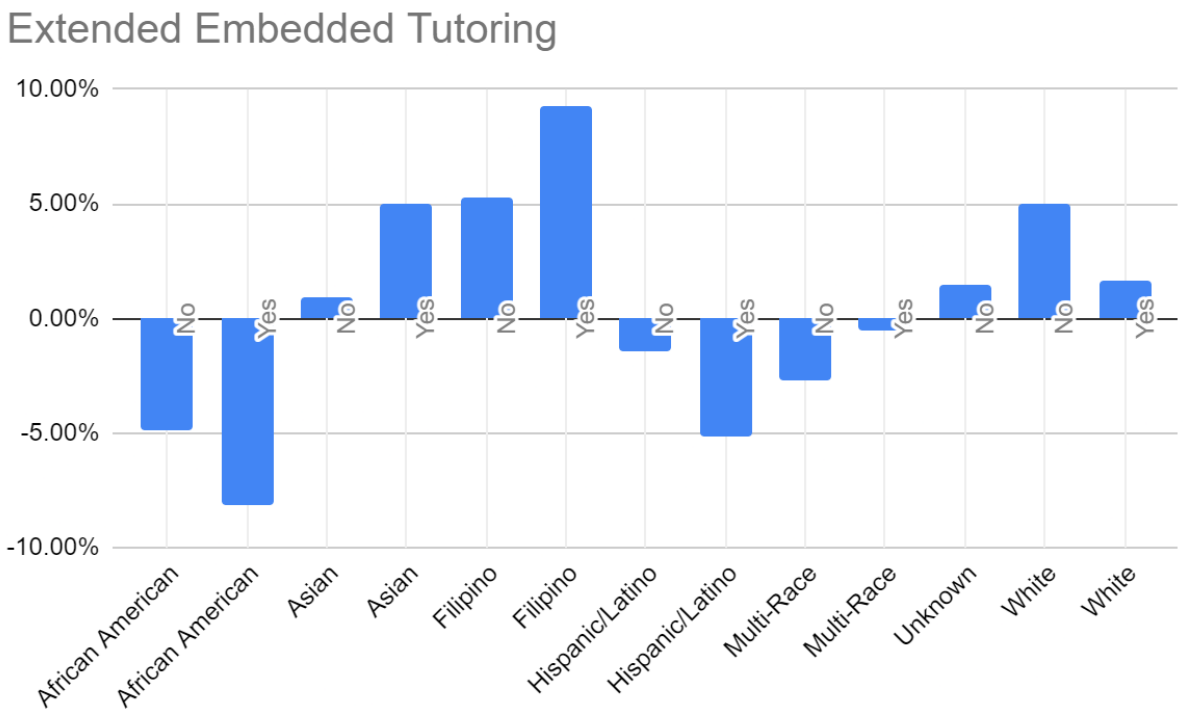
Extended Embedded Tutoring Course Success (Chi-Square = 0.001, df = 1, p>0.05)

Course	***With SA/SI***	***Without SA/SI***
ECE 300, ENGWR 301, HSER 302, MATH 120, MATH 335, MATH 341, and PSYC 356	56.7% (289)	56.4% (1039)

Extended Embedded Tutoring Student Persistence into Fall (Chi-Square = 0.10, df = 1, p>0.05)

Course	***With SA/SI***	***Without SA/SI***
ECE 300, ENGWR 301, HSER 302, MATH 120, MATH 335, MATH 341, and PSYC 356	60.6% (289)	61.8% (1039)

Extended Embedded Tutoring - Equity Gaps (Yes = Tutor, No = No Tutor)



Extended Embedded Tutoring - Equity Gaps

Race/Ethnicity	SA/SI Tutor	Course Success	n	Equity Gap
African American	No	51.55%	97	-4.85%
African American	Yes	51.22%	41	-8.13%
Asian	No	57.30%	281	0.89%
Asian	Yes	64.38%	160	5.03%
Filipino	No	61.64%	73	5.24%
Filipino	Yes	68.57%	35	9.22%
Hispanic/Latino	No	54.98%	291	-1.42%
Hispanic/Latino	Yes	54.24%	177	-5.11%
Multi-Race	No	53.75%	80	-2.65%
Multi-Race	Yes	58.82%	34	-0.52%
Unknown	No	57.89%	19	1.49%
White	No	61.41%	184	5.01%
White	Yes	60.98%	123	1.63%

Extended Embedded Tutoring Survey Findings

7 extended embedded tutoring faculty members responded to the Spring 2022 Extended Embedded Tutoring Faculty Survey, 70% of the extended embedded tutoring faculty leaders. 11 extended embedded tutors responded to the Spring 2022 English SA Tutor Survey, 85% of extended embedded tutors. All responding faculty members also had at least one tutor respond

to the survey, meaning that the experiences of tutor and faculty respondents in the extended embedded tutoring program can be generally compared. The surveys found similarities and differences in the ways that faculty and student assistants perceive and implement the extended embedded tutoring program.

The surveys first asked faculty and tutors to identify the objectives they feel belong to the embedded tutoring program. Faculty and tutors who responded to the surveys generally agreed that *Increase course success* and *Help students understand and apply course content* are goals of the program. However, 86% of faculty respondents said that *Decrease equity gaps in course success* was an objective of the program, while only 55% of tutor respondents identified this objective. Conversely, 100% of tutor respondents identified the objective *Help students feel more comfortable and confident in their courses*, while 45% of faculty respondents identified that goal. Generally, less than 60% of faculty and tutor respondents identified the goal to *increase the number of students using tutoring*.

Please check all of the program objectives you feel belong to the Embedded Tutoring Program

Objective	***Faculty***	***SI Tutors***
Increase course success	100% (7)	100% (11)
Decrease equity gaps in course success	86% (6)	55% (6)
Meet students' tutoring needs	100% (7)	73% (8)
Help students understand and apply course content	100% (7)	100% (11)
Help students feel more comfortable and confident in their courses	45% (5)	100% (11)
Increase the number of students using tutoring	57% (4)	55% (6)

All tutors said that they received some kind of training. Tutors most often said that their training covered *teaching/tutoring methods*, *sharing tutoring strategies with other tutors*, and *logistics/requirements of the program*. Only a handful of tutors said that their training covered *learning about the content areas where students struggle the most*.

What did your training cover?

Training Topic	***Embedded Tutors***
Teaching/tutoring methods	82% (9)
Sharing tutoring strategies with other tutors	82% (9)
Logistics/requirements of the embedded tutor position (getting paid, turning in time sheets, responsibilities)	73% (8)

Learning about the content areas where students struggle the most	36% (4)
Culturally relevant teaching and learning	27% (3)
Understanding the various student populations we serve (DSPS, ESL, other demographic groups)	27% (3)
Other	0% (0)

Generally, tutors and faculty agree on the skills/qualities that are most important in an SI tutor. They most often cite *empathy* and *teaching/tutoring skills.*

What are the skills/qualities that you think are important to be an embedded tutor?

Skill/quality	***Faculty***	***Embedded Tutors***
Having passed the course previously	100% (7)	64% (7)
A very good mastery of course topics	86% (6)	82% (9)
Being able to empathize with students' experiences	86% (6)	100% (11)
Teaching/tutoring skills	86% (6)	91% (10)
Other:	29% (2) *Affective domain* *"After COVID, someone who has an understanding of technology, the ability to adapt to situations, and is open to individualized tutoring training"*	27% (3) *Communication; technology* *Problem solving* *Responsiveness*

Extended embedded tutors and faculty were asked, "In an ideal, resource-rich world, is there anything you would like to see changed and/or added to the program that you feel would contribute to its objectives?" In response, tutors cited increasing students' access to their tutor/helping them feel more comfortable seeking help (3); increased training, including on how to build rapport with students (2); and increased tutor diversity (1). Faculty similarly suggested increased and specific training for tutors (2) as well as faculty, so that they may best implement tutor support (1), as well as increased hours for the program so that it can extend through finals (1).

Recommendations

Based on the above findings, the Research and Equity Office recommends the following:

1. Continue to clarify programmatic goals and related activities through dialogue amongst embedded tutoring stakeholders
2. Communicate equity goals and positive practices with both faculty and embedded tutors
3. Tailor tutor and faculty trainings to programmatic goals, most notably student equity
4. Explore how embedded tutoring at CRC might be adapted to help reduce equity gaps
5. Collaborate across programs to share positive practices
6. Continue research that monitors all five aspects of program implementation, including dose, quality, participant responsiveness, and program differentiatio

Limitations

This evaluation is impacted by several important limitations, some of which can be remediated in future evaluation work. This year, in an effort to increase survey response rates, evaluators tried a new method of survey distribution that asked program faculty to distribute anonymous survey links directly to students. Unfortunately, due to the plethora of obligations at the end of the semester, not all surveys were distributed and those that were saw a very low response rate. In the future, evaluators will revert to direct emails to students participating in the program.

The embedded tutoring program is also nuanced and varied from program to program, involving a program coordinator with limited FTE for each program, as well as the Tutoring Center Coordinator. Due to the boutique nature of each program, it is difficult to draw conclusions about individual interventions, and global recommendations for embedded tutoring may mask nuances across programs. In addition, the implementation of embedded tutoring within each class varies from instructor to instructor, but due to sampling limitations, the evaluation cannot control for any effect this variance might have on program outcomes.

Finally, small sample sizes make data disaggregation at the course level limited to impossible.

Appendices

Appendix 1: Additional SI Survey Results

The surveys had faculty and tutor respondents identify the ways in which they advertise the SI program to students. Faculty and tutors generally identified the same methods. Both groups identified Canvas announcements as the most common way they advertised to students, and few respondents in both groups cited extra credit. However, more SI tutors said they make individual referrals to tutoring than their faculty counterparts.

In what ways do you and/or your instructor advertise/encourage students to attend any outside of class SI sessions?

Method	***Faculty***	***SI Tutors***

Canvas announcements	75% (3)	60% (3)
Course syllabus	50% (2)	40% (2)
Classroom or Zoom announcements	50% (2)	60% (3)
Emails	25% (1)	40% (2)
Individual referrals	25% (1)	60% (3)
Extra credit	0% (0)	20% (1)
Students are required to attend SI sessions as a mandatory part of their grade	25% (1)	0% (0)
Other	25% (1)	0% (0)
I do not have sessions outside of class	25% (1)	20% (1)

Faculty and SI tutor respondents generally identified that SI tutors most often *provide one-on-one support to students, provide support during small group work, and answer students' individual questions.* More SI tutors than faculty said that the SI role is involved with *learning about students' individual struggles with the material* and *passing out materials*.

What do you do in class as part of your SI tutor role?

Method	***Faculty***	***SI Tutors***
Providing one-on-one support to students	100% (4)	80% (4)
Providing support during small group work	50% (2)	80% (4)
Answering individual student questions	75% (3)	100% (5)
Taking attendance	0% (0)	0% (0)
Discussing course content and delivery after class with me/my instructor	0% (0)	20% (1)
Learning about students' individual struggles with the content	50% (2)	80% (4)
Passing out materials	0% (0)	40% (2)
Other	0% (0)	0% (0)

Appendix 2: Additional English SA Survey Results

Student Assistants and faculty were asked how often they typically communicate with one another outside of class and what they typically discuss. Tutors and faculty generally said that they communicate once per week on average.

How much do you agree with the following statements? (just for tutors)

Statement	***Mean (5 = high agreement, 1= low agreement)***
Students feel comfortable asking me for help	4.00
I feel prepared to help students in the areas where they are most struggling	4.38
I adjust my communication to meet the students where they are most comfortable	4.54
I play an active role in students' success	4.09

Faculty and student assistant respondents generally identified that student assistants most often *provide one-on-one support to students,* and *answer students' individual questions.* Two student assistants and one faculty member added that the SA in their course(s) is involved with grading and/or feedback on assignments.

What do you do in class as part of your SA tutor role?

Method	***Faculty***	***Student Assistants***
Providing one-on-one support to students	89% (8)	85% (11)
Providing support during small group work	78% (7)	54% (7)
Answering individual student questions	89% (8)	92% (12)
Taking attendance	44% (4)	31% (4)
Discussing course content and delivery after class with me/my instructor	78% (7)	62% (8)
Learning about students' individual struggles with the content	78% (7)	69% (9)
Passing out materials	56% (5)	31% (4)
Other	11% (1) Assignment feedback (1)	23% (3) Grading (2) Leading discussions (1)

In what ways do you and/or your instructor advertise/encourage students to attend any outside of class SA sessions?

Method	***Faculty***	***Student Assistants***
Canvas announcements	100% (6)	100% (6)

Course syllabus	50% (3)	50% (3)
Classroom or Zoom announcements	100% (6)	100% (6)
Emails	50% (3)	67% (4)
Individual referrals	67% (4)	33% (2)
Extra credit	100% (6)	17% (1)
Students are required to attend SA sessions as a mandatory part of their grade	0% (0)	0% (0)

Appendix 3: Additional ESL SA Survey Results

Faculty and student assistant respondents generally identified that student assistants most often *provide one-on-one support to students* and *provide support during small group work.* 100% of faculty said the *SA serves as a model for college student behavior*, though this option was not present on the student survey.

What do you do in class as part of your SA tutor role?

Method	***Faculty***	***Student Assistants***
Providing one-on-one support to students	83% (5)	83% (5)
Providing support during small group work	100% (6)	83% (5)
Taking attendance	67% (4)	50% (3)
Discussing course content and delivery after class with me/my instructor	83% (5)	67% (4)
Learning about students' individual struggles with the content	Not an option	100% (6)
Passing out materials	33% (2)	50% (3)
SA acts as a role model for college student behavior	100% (6)	Not an option
SA shares personal experiences in college-level courses	50% (3)	Not an option
SA provides technology support	83% (5)	Not an option
Other	50% (3) SA monitors breakout rooms (1) SA checks to see if students have submitted assignments (1)	0% (0)

	SA adds examples and answers questions in the chat (1)	

On a scale of “never” (1) to “always” (5), ESL SA’s said they only “sometimes” (2) communicate with students in a language other than English.

Statement	***Mean (5 = high agreement, 1= low agreement)***
I am able to relate to ESL students’ experiences	4.67
I understand ESL students’ needs	4.83
I am comfortable answering ESL students’ questions about course content	4.83

Appendix 4: Additional Extended Embedded Tutoring Survey Results

Embedded tutors generally feel that they are prepared to help students and that students are comfortable asking them for help.

How much do you agree with the following statements? (just for tutors)

Statement	***Mean (5 = high agreement, 1= low agreement)***
Students feel comfortable asking me for help	4.1
I feel prepared to help students in the areas where they are most struggling	4.7
I adjust my communication to meet the students where they are most comfortable	4.5
I play an active role in students’ success	4.3

Appendix 5: Treatment Group Demographics

MATH SI - Demographics Representation by Race/Ethnicity (n>10)

MATH SI with Treatment				**MATH SI without Treatment**		
Race/Ethnicity	**n**	**Representation**		**Race/Ethnicity**	**n**	**Representation**
African American	29	8.17%		African American	50	10.68%
Asian	107	30.14%		Asian	111	23.72%
Filipino	30	8.45%		Filipino	25	5.34%
Hispanic/Latino	109	30.70%		Hispanic/Latino	153	32.69%
Multi-Race	25	7.04%		Multi-Race	42	8.97%

White	48	13.52%		White	79	16.88%

ENGLISH SA - Demographics Representation by Race/Ethnicity (n>10)

ENGLISH SA with Treatment				**ENGLISH SA Without Treatment**		
Race/Ethnicity	**n**	**Representation**		**Race/Ethnicity**	**n**	**Representation**
African American	68	10.38%		African American	77	11.92%
Asian	165	25.19%		Asian	140	21.67%
Filipino	44	6.72%		Filipino	26	4.02%
Hispanic/Latino	203	30.99%		Hispanic/Latino	195	30.19%
Multi-Race	48	7.33%		Multi-Race	52	8.05%
White	116	17.71%		White	139	21.52%

Extended Embedded Tutoring Demographics Representation by Race/Ethnicity (n>10)

Extended Embedded Tutoring with Treatment				**Extended Embedded Tutoring without Treatment**		
Race/Ethnicity	**n**	**Representation**		**Race/Ethnicity**	**n**	**Representation**
African American	41	7.03%		African American	97	9.34%
Asian	160	27.44%		Asian	281	27.05%
Filipino	35	6.00%		Filipino	73	7.03%
Hispanic/Latino	177	30.36%		Hispanic/Latino	291	28.01%
Multi-Race	34	5.83%		Multi-Race	80	7.70%
White	123	21.10%		Unknown	19	1.83%
				White	184	17.71%