Background for SCR presentation

Slideshow:
- Background Information
- Methodology
- Results/Findings
- Conclusion

Research Question:
What are the factors that influence whether someone DOES NOT TAKE Computer Science?

RESEARCH ROSTER OF STUDENTS AND TEACHERS, AND UCSD COACH

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UCSD Coach
Dr. Beth Simon

Teachers
Juan Ramirez
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District TOSA
Computer Science
Art Lopez

UCSD Graduate Student
Kristin Tenney

Otay Ranch High School

- Location: Chula Vista, CA
- Student to Teacher Ratio: 25:1
- Graduation Rate: 98%
- Economically Disadvantaged: 36%
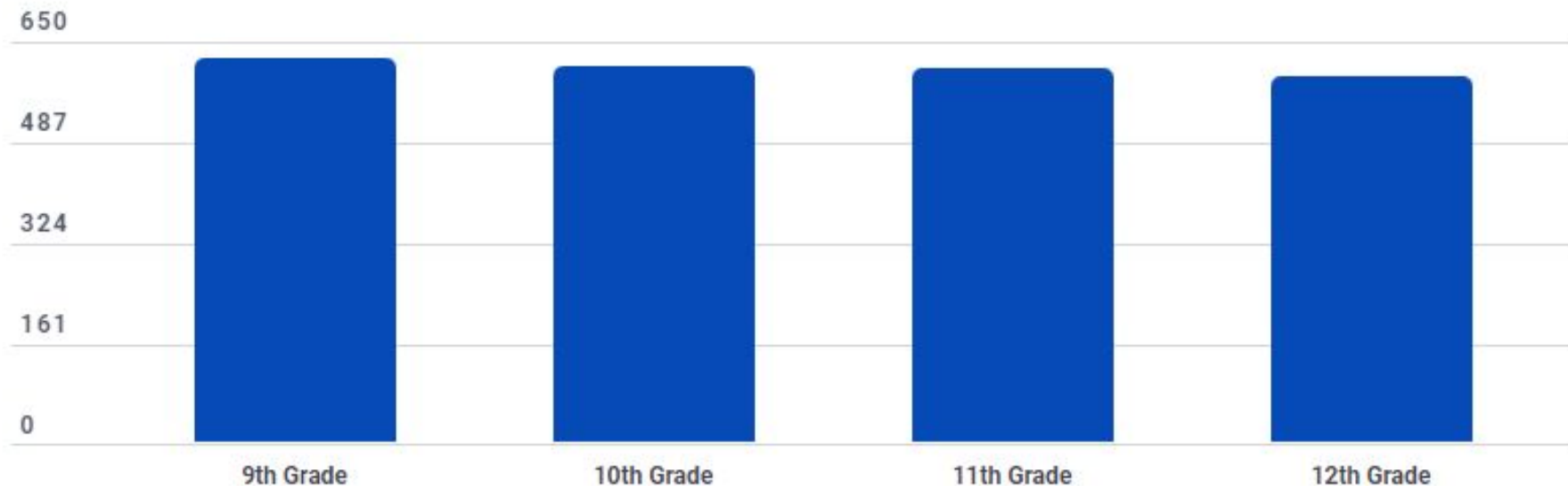

[Otay Ranch High School](#)
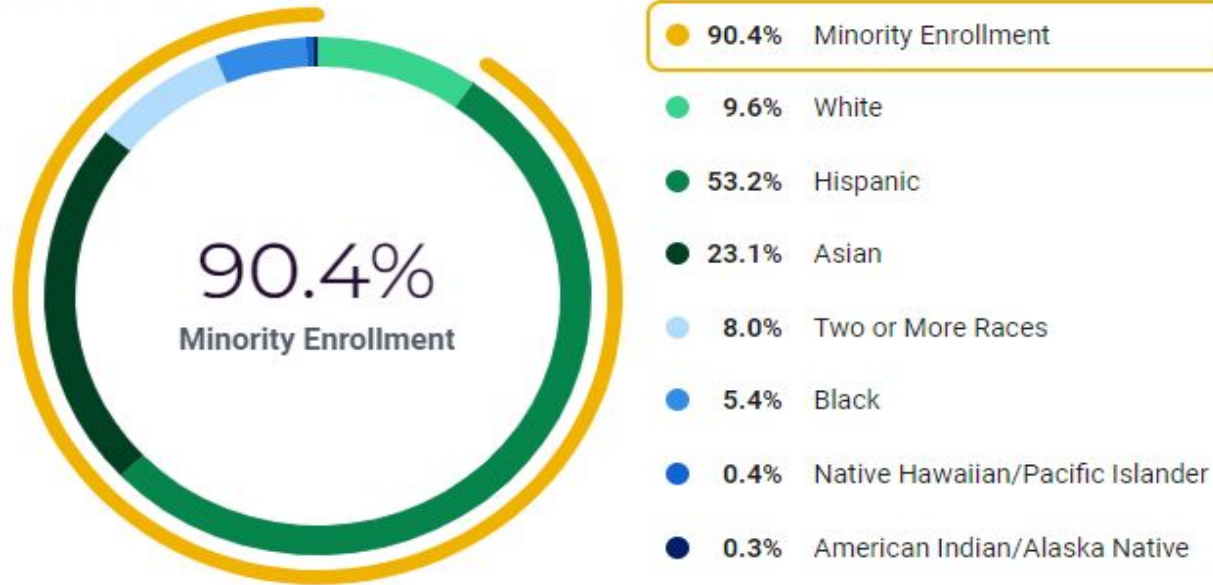
Otay Ranch High School

Total Enrollment   **2,410**

Student Enrollment by Grade

DEMOGRAPHICS

Student Diversity

90.4%
Minority Enrollment

●	**90.4%**	Minority Enrollment
●	**9.6%**	White
●	**53.2%**	Hispanic
●	**23.1%**	Asian
●	**8.0%**	Two or More Races
●	**5.4%**	Black
●	**0.4%**	Native Hawaiian/Pacific Islander
●	**0.3%**	American Indian/Alaska Native

Gender Distribution

● Female **50%** ● Male **50%**

Background Information in Computer Science at Otay Ranch High School

AP Computer Science Principles at Otay Ranch since 2015-2016 school year

- Passing Rate: 63% - 85%
- Total Enrollment: 98 - 116 per year
- Female Enrollment: 19% to 40% throughout 7 years.
- Sections per year: 1 section (2016, 2017), 3 sections (2018-2022).

AP Computer Science A since 2020-2021

- Passing Rate: 45%
- Total Enrollment: 2021 [37], 2022 [17]
- Female Enrollment: 2021 [17%], 2022 [29%]
- Sections per year: 1 [both years]

Research Question(s)

What are the factors that influence whether someone **DOES NOT TAKE** Computer Science?

- A: How can we *increase the number of students taking CS courses?*
- B: *What are the potential barriers/problems?*

Abstract

- **Timeline** for Research Project: 3 months.
- **Research Methods**: Surveys and Interviews.
- **Factors** resulting in people not taking computer science:
  - Interest,
  - Future plans,
  - Counselor recommendations.

Methodologies: Surveys and Interviews.

Methods used in Surveys:
- Questions about why students NOT taking CS?
- Surveyed 226 students
- All the students were surveyed at 5/3/22
- Consists of short answers, open ended & open & close

Otay Ranch High School CS-LISTEN: What are the factors that influence whether someone DOES NOT TAKE Computer Science (CS)?

Otay Ranch HS CS-LISTEN Team: Would like to offer a raffle prize for people filling out the survey? Here is an example: "By taking this survey, you will help us get a better understanding for why people do not talk about computer science. Also, by taking this survey, you will be automatically entered into a raffle for a $50 GIFT CARD! *Please make sure to use your school email*"

This form is automatically collecting emails for Sweetwater Union High School District users. Change settings

ID Number *

Short answer text

What grade are you in? *
- 9th
- 10th
- 11th
- 12th

What ethnicity do you identify with? *
- African American or Black
- American Indian
- Arab or Middle Eastern
- Asian or Asian American
- Caucasian
- Filipino/a/x
- Hispanic or Latino/a/x
- Native Hawaiian or Other Pacific Islander
- Other...

Methods use in Interviews:
- Short Answer
  - Yes or No
- Open ended questions
  - Reason, honest thought
- Open & Close questions
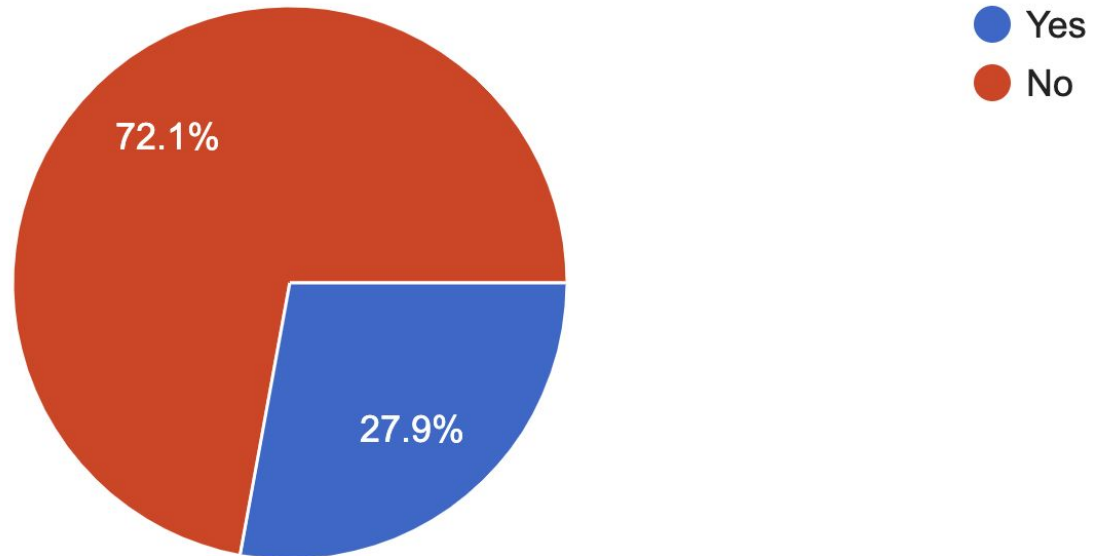 - Why or why not

Survey Questions Preliminary Findings

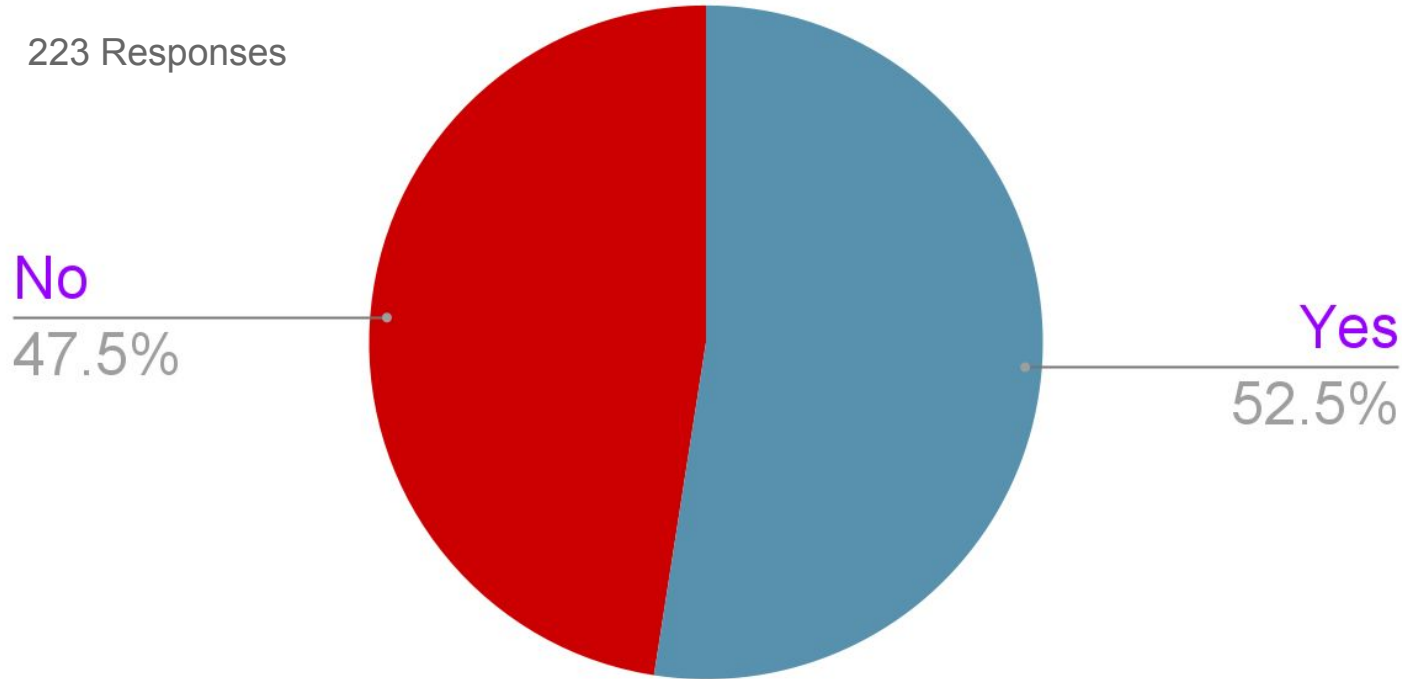# Survey Question Findings: Have you taken any computer science courses yourself?

Have you taken any computer science courses yourself?

226 responses

- ● Yes
- ● No

72.1%

27.9%

Have you ever CONSIDERED taking a Computer Science class? Why or why not?

223 Responses

No
47.5%

Yes
52.5%

Survey Question Findings: Have you ever considered taking a Computer Science class? "Yes"

Most Common Responses	Interesting/ Surprising Responses
- Relevant for the future - Interested in CS - Already taken CS courses	- Friends encouraged taking the class - Taken interest because parents work in CS fields

Survey Question Findings: Have you ever considered taking a Computer Science class? "No"

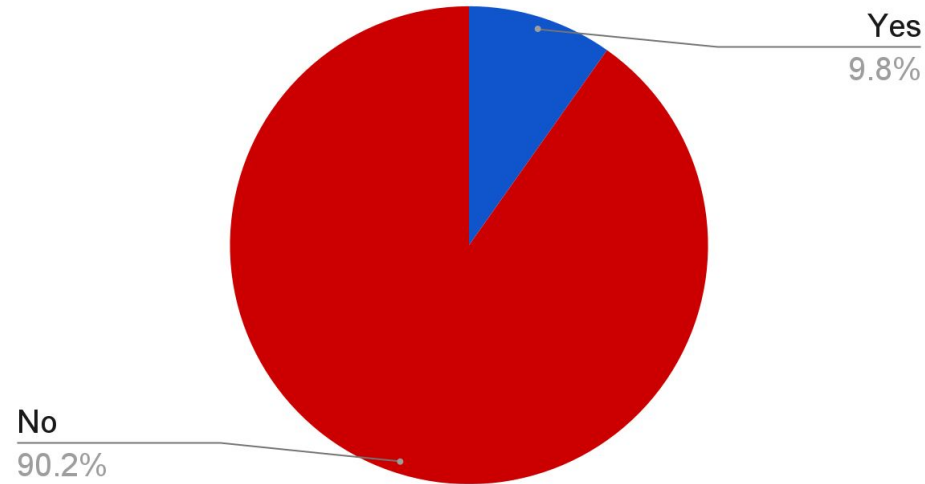| Most Common Responses	Interesting/ Surprising Responses
- Not interested - Not part of future plans - Too complicated	- Have not heard of the class - Not enough room in class schedule

Conclusion: Survey Question 6

We have concluded that not a lot of our respondents have taken CS classes because they are not interested, it's not part of future plans, or it is too complicated.

Survey Question Findings: Have your counselors put forth the idea of taking CS classes? (YES or NO)

Out of the 225 responses 90.2% of the students have not had a counselor put forth the idea of taking computer science classes, while only 9.8% of the students have had counselors put forth the idea of taking computer science classes.

Have your counselors put forth the idea of taking CS classes?

Yes
9.8%

No
90.2%

A majority of the time, counselors do not put forth the idea of taking Computer Science Classes.
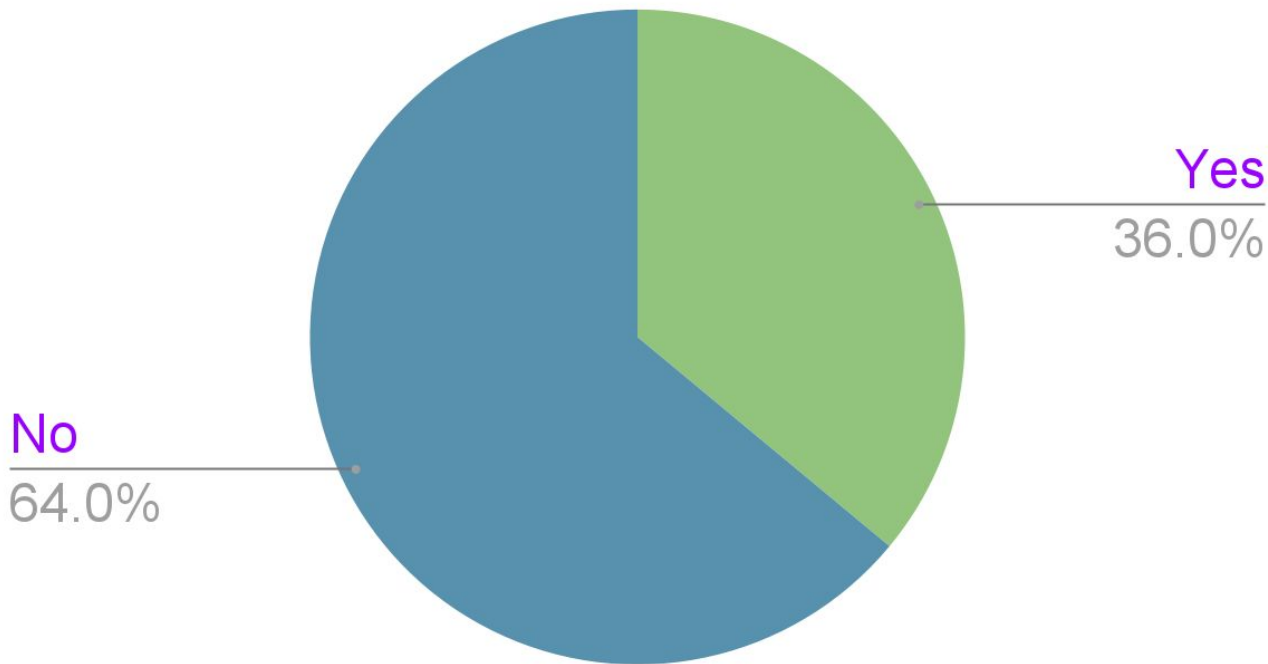
We can connect this to the survey question, "Have you ever considered taking a Computer Science class? Why or why not?" since some of the responses included:

- "I didn't have enough schedule spots"
- "All the spots were already taken"
- "No one has brought it up yet"
- "I didn't know they offered that class"

Survey Question Findings: Do your parents encourage you to take CS classes?

Do your parents encourage you to take CS classes?

Yes
36.0%

No
64.0%

Survey Question Findings: Do your parents encourage you to take CS classes? "Yes"

Most Common Responses	Surprising Responses
● "Yes, they believe its important"	● "They don't mind me taking it as long it's what i want to do"

Survey Question Findings: Do your parents encourage you to take CS classes? "No"

Most Common Responses	Surprising Responses
No, since it isn't in their field of interest.	"They are old fashion" "Never heard of it"

Conclusion: Survey Question 11

As a result of our research, we have concluded the fact that parents of the students hardly encourage their children to take computer science classes due to the fact that the parents have never heard of it, or because computer science is not in the students field of interest.
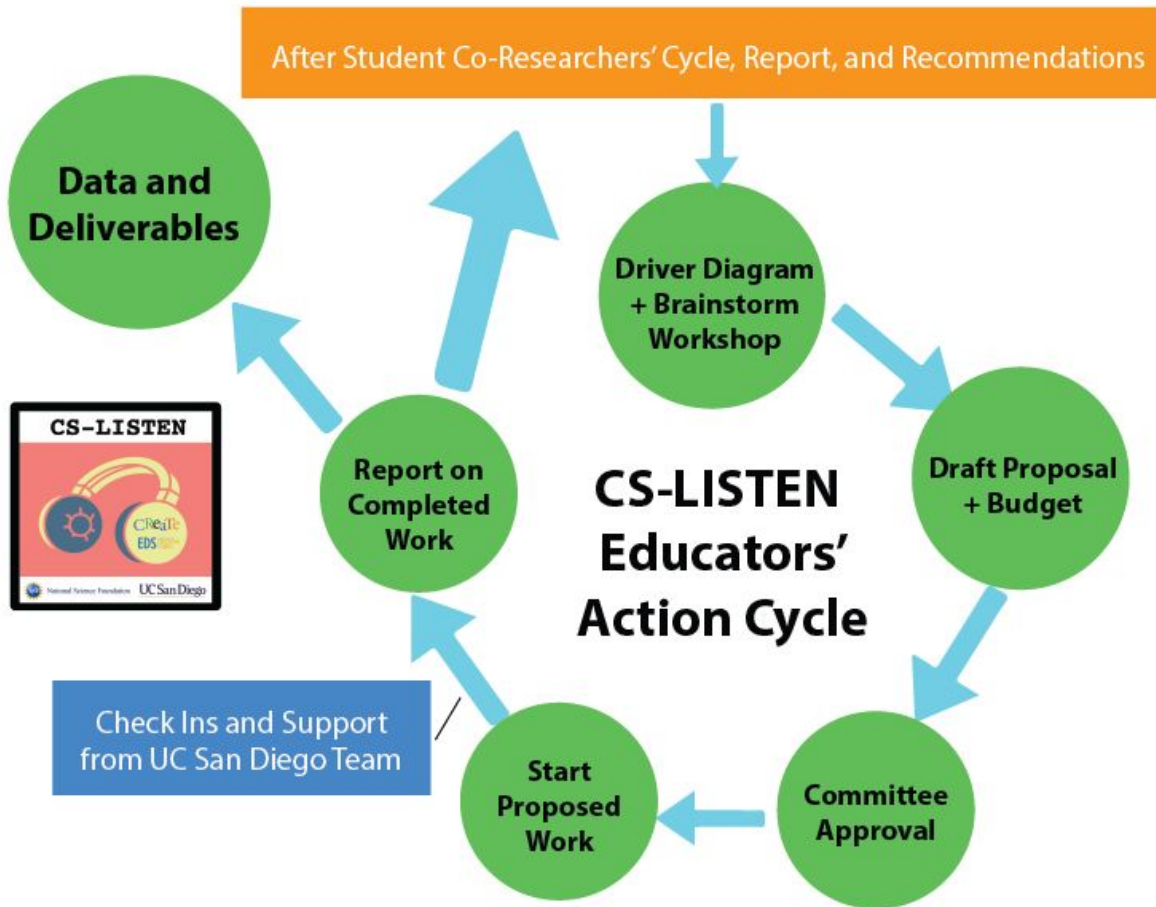
Overall Conclusion: Surveys

- Not a lot of counselors suggests their students to take computer science classes, only about 9.2% of students' counselors recommend computer science classes
- Many of the results conclude that the students who are not taking computer science courses have no interest in the course due to their future plans or future career paths having no correlation to computer science

Interviews and Foresight

While performing interviews with various students, we came to the conclusion that although we were able to collect data, we were unable to analyze and use the answers due to time restrictions leaving us with questions about:

- How can the analyzed data be used to aid CS courses?
- Does our school accurately reflect all CS course populations within the district?
- How do students perspectives on the class as a whole affect enrollment within CS courses?

After Student Co-Researchers' Cycle, Report, and Recommendations

Data and Deliverables

CS-LISTEN

Report on Completed Work

Driver Diagram + Brainstorm Workshop

CS-LISTEN Educators' Action Cycle

Draft Proposal + Budget

Check Ins and Support from UC San Diego Team

Start Proposed Work

Committee Approval

Recommendations for Action Cycles

- Promote the participation by using motivational speakers who display the benefits of CS
- Change people's perspectives of those participating in CS
- Upgrade the available technology to seem more appealing to students.
- Advertise the class more in order to increase engagement.
- Provide workshops and trainings for counselors and parents about the importance and benefits of Computer Science

Questions?