

CS Stereotypes vs Class Enrollment

**San Pasqual
High School**

**CS LISTEN UP
Conference
May 18, 2022**



Overview of Slideshow:

- 1. Background Information**
- 2. Research and Findings**
- 3. Conclusions and Recommendations**

Research Question:

Do students' stereotypes or preconceptions about Computer Science prevent them from taking CS classes?

Abstract

Our research question was, *“Do students’ stereotypes or preconceptions about computer science prevent them from taking Computer Science classes?”*

At San Pasqual, we used a google form survey to collect data from as many students as possible. We obtained a total of 264 responses from students. Out of the students who explained why they would not take a CS class, 52% listed a stereotypical reasons (Not interesting, too hard, and boring).

Additional questions surrounding stereotypes also had similar findings. In summary, students’ stereotypes about Computer Science are preventing them from taking CS classes at San Pasqual.

San Pasqual and its Computer Science

San Pasqual

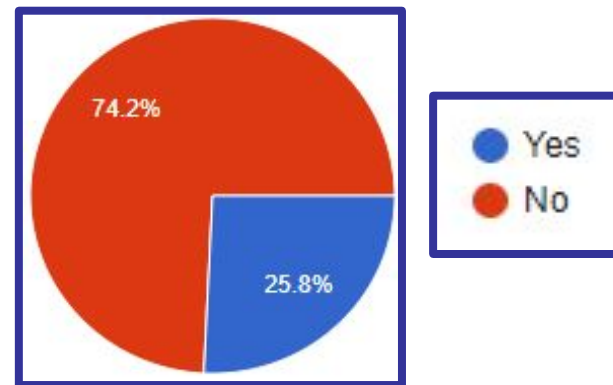
- Located in a suburban area in EUHSD
- Title 1 School

Computer Science

At San Pasqual there are a total of three Computer Science courses available. These are:

- Exploring Computer Science
- AP Computer Science Principles
- AP Computer Science A

CS History Distribution

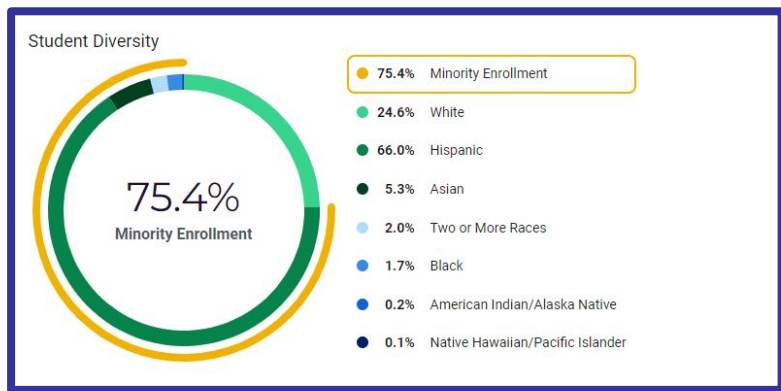


Of those surveyed, 74.2% have never taken a CS course.

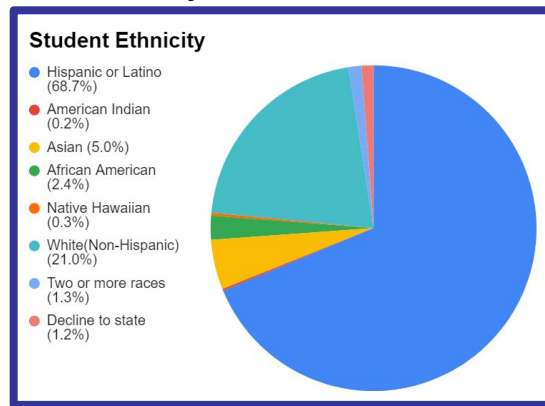
Background Information of San Pasqual's Students

Our school demographic includes a total minority enrollment of **75%** and **66%** economically disadvantaged students. Our own survey encompasses **68.7%** Hispanic or Latino students, **21%** White/Non-Hispanic students and **10.3%** of other ethnicities. The comparative racial distributions are provided below. We tried to be as representative of the true population as possible.

School Provided Distribution



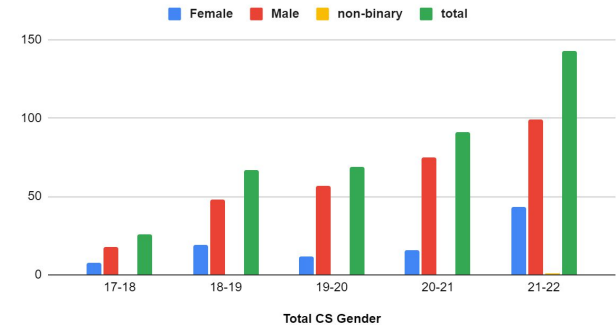
Survey Distribution



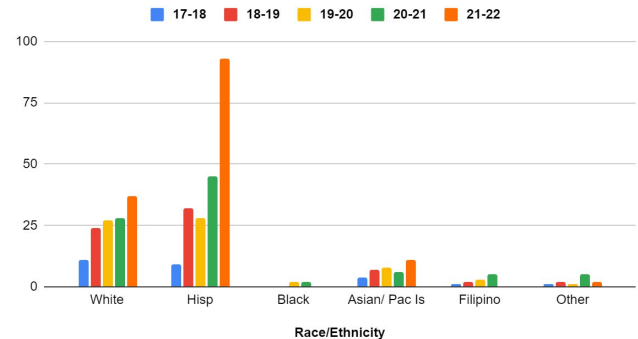
San Pasqual's CS Enrollment by Gender and Race

- Although we have made advancements, there still is a large gap between the amount of female and male students enrolled in CS.
- This year, there has been a spike in the number of ELD students in CS. This has brought in many Latino and Hispanic students to CS.
- While other samples were too small to extrapolate, the current Hispanic/Latino community had **73.52%** of students that have never taken a computer science class.

Female, Male, Non-Binary and Total in CS



Race/Ethnicity in CS



RQ: Do students' stereotypes or preconceptions about Computer Science prevent them from taking CS classes?

- **Noticed** that many people do not take Computer Science
- **Wondered** if students' opinions are affected by CS stereotypes
- **Recalled** what peers shared
- **Decided** on question to understand more



Methodology

Survey

- 27 questions
 - Short-answer
 - Multiple choice
- Topics:
 - Demographics
 - Personal background
 - CS background
 - Opinions towards CS
 - 5-point scale:
Strongly Disagree to
Strongly Agree
- 264 responses

UCSD Research Survey- CS Listens- 2022

Please fill out this Computer Science related survey to the best of your ability. Be honest. This survey will be both anonymous and used to make recommendations to improve access and equity to Computer Science classes on campus.



UCSD

COMPUTER SCIENCE RESEARCH SURVEY



Please help the Computer Science Honors Society by filling out this survey! We will be presenting the data and our insights to UCSD, and later use it to make recommendations to improve access and equity in Computer Science classes.

*You do **not** have to be in a Computer Science class to take the survey.

*Answers will be **anonymous**.

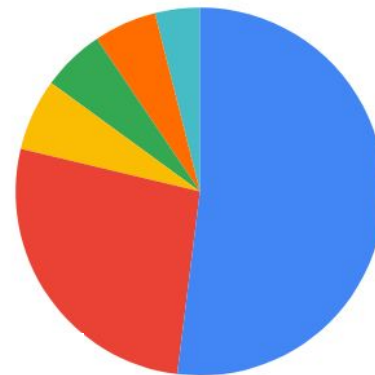
*Students who take the survey will be automatically entered in a **raffle** for a chance to win prizes.

Findings - Stereotypes Prevent Enrollment

- Out of every response provided for not taking a Computer Science Course, **52% were a stereotype.**
- The most common stereotype was that **Computer Science was not interesting**, followed by the stereotype that it was **too hard.**

What is preventing you from taking a CS course?

- Stereotypes (52%)
- Don't have time / Full schedule (26.8%)
- Won't need it in the future (6.3%)
- Don't like it (5.5%)
- Don't want to (5.5%)
- Didn't know about the class (3.9%)



Stereotypical Answers

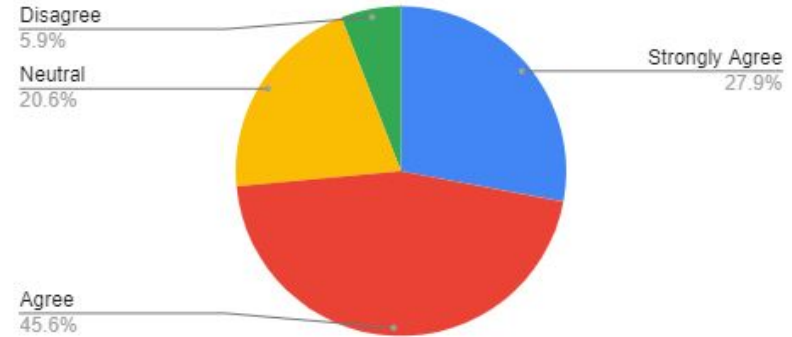
- It's not interesting (48.6%)
- It's too hard (21.4%)
- I need prior knowledge (11.4%)
- It's boring (18.6%)



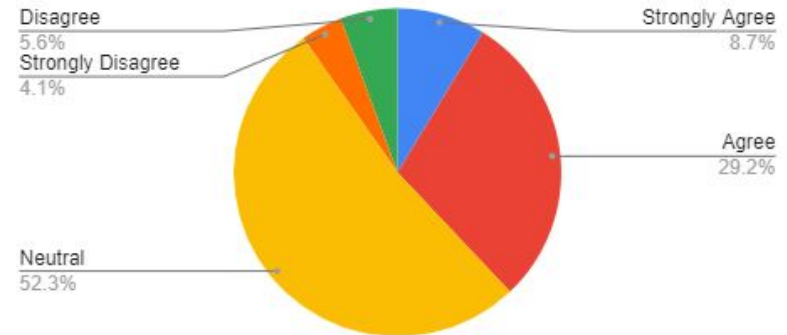
Findings - People That are Not in CS Have Different Opinions

- Out of the people **in** a CS class, **73.5%** agreed that CS is **cool**.
- Only **37.9%** of people **not in** a CS class believed CS **was cool**.
- **52.3%** of students **not in** a CS class had a **neutral response** when asked if CS was cool.
- This allows us to conclude that those with CS experience are more likely to call CS cool.

People in a CS class: Computer Science is cool.

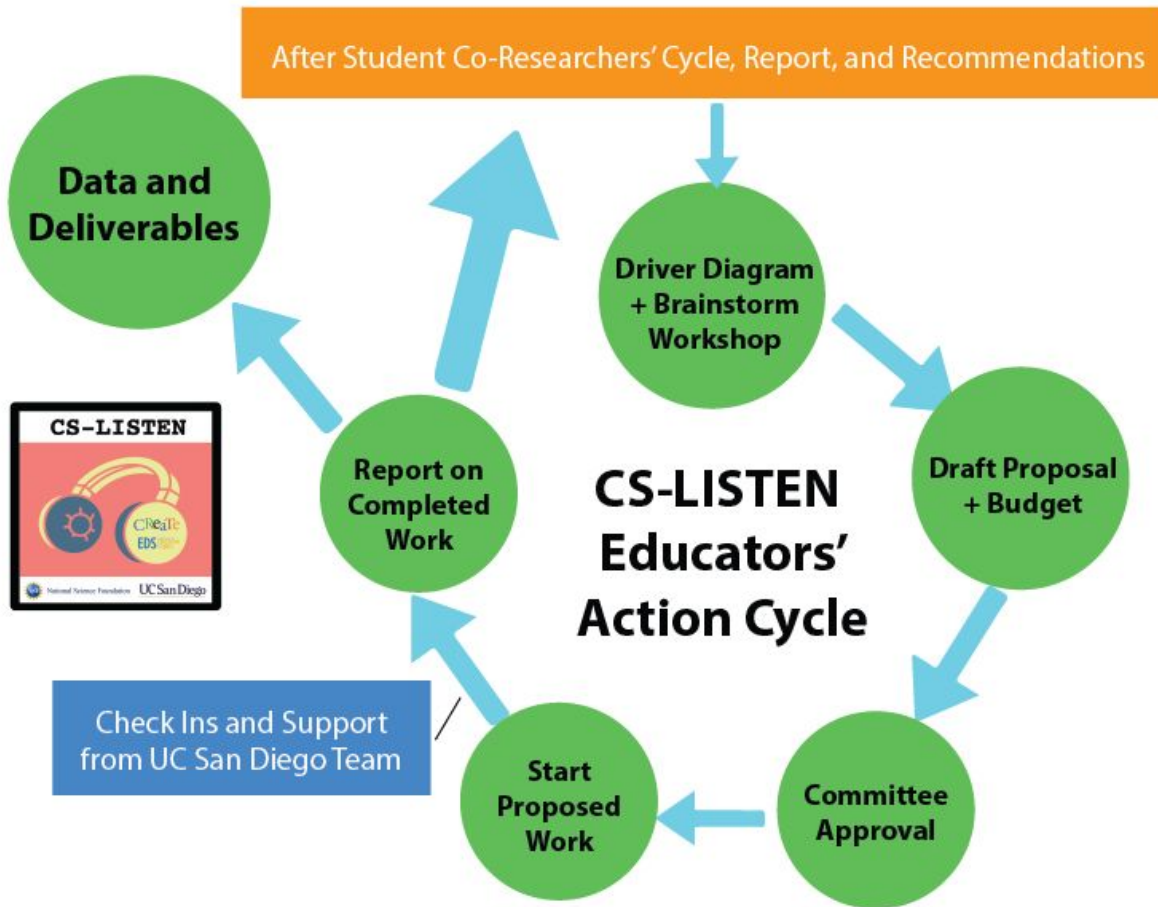


People not in a CS class: Computer Science is cool.



Overall Conclusion

- Our data points to some interesting trends to explore the possibility of how stereotypes can impact CS enrollment.
- The data also suggests that CS class enrollment positively impacts students' perspectives and interests in Computer Science.
- However, we would like a larger sample size to substantiate our claims.



Our Recommendations for Action Cycles

Our School can use:

- Interactive workshops
- Displays of computer science innovations at school events (club rush, math honors night, etc.)
- Advertising over Social Media



We can **work with EUSD** to:

- Introduce young students to CS *before* their opinion has been affected by others
- Provide students with a judgement-free creation zone (ex. Code.org)
 - Creative projects provide better memories

Within outreach and research, our school can help us gather more information for our survey in order to draw more concrete claims and decide further action.

Any Questions?
