

Female Underrepresentation in Computer Science at EHS



**Escondido
High School**

**CS LISTEN UP
Conference
November 18, 2020**



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The SCR Team



Background Information of your school

	<u>Percentage of Students in CS Classes</u>	<u>Percentage of Students Overall at EHS</u>
Female	34.7%	50%
Male	65.3%	50%
White	15%	16%
Black	1.7%	3%
Asian	8.6%	6%
Hispanic	73.4%	75%



- 92% socioeconomically disadvantaged students
- Ranked 790th out of 2133 California High Schools

<https://www.ehscougars.com>

Background Information in Computer Science at Escondido high school

Courses Offered:

- Exploring Computer Science
- AP Computer Science Principles



Computer Science After-School Activities

- Computer Science Honors Society NEW (Instructor - Barron)
- Coding Club NEW (Instructor - Barron)
- Code Queens (Instructor - Barron)
- Robotics (Instructor - Tisdale)

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Research Question(s)

What are the reasons the percentage of female students at EHS taking a computer science class is lower than the percentage of male students?

We started off with our original question which was what are the causes different diverse groups take or do not take on the idea of being in a computer science class. After we had gathered all of our data we then decided to change the research question to focus on why females are deciding not to take a computer science class.

Methodology

- First we began by developing our research question.
- We gathered data by creating a Google Forms survey, the survey was 13 questions long, and was incentivized with a gift card raffle
- After the survey was completed we need responses for it so, we went around to different classes and explained to them what we were doing and researching and asked them to fill out our survey, and in the end we gathered a sample size of 347 students.
- After we had gotten the responses, we got the demographics of the data and recorded a few conclusions to answer to our research question

Findings

Our findings showed us that:

- Girls are less likely to take a computer science class due to not having room in their schedule
- 24% of the girls surveyed are NOT interested in a STEM career.
- 98% of students surveyed have access to the internet at home
- 91% of female students surveyed said they knew Computer Science was offered at our school.
- 91% of those female students, 57% of them are not taking CS courses in our school and not planning to.
- 76% of female students never considered a career in CS



Findings

Our findings showed us that:

- Most girls stated that they didn't consider taking a CS class due to:
 - 64% of female students thought it was a hard class which stems from misunderstandings about CS.
 - As well as not having room in their schedule for it. (61% of female students)
 - CS not dealing with their future career
- Most girls who considered taking a CS class considered it because they thought they'd need exposure to coding in the future and they heard it was fun and there was no homework



Findings

Our findings showed us that:

- Most girls who are not taking CS classes have some form of extracurricular activity including work(64% of female students).
- 31% Females who are not taking CS want to take it.
- 2% of female students that are not taking CS have room in their schedule.
- Only 20 out of the 170 girls surveyed reported having room in their schedule the following year for a Computer Science course.
- 79% females who take or plan to take CS think it can impact their career.



Overall Conclusion

- We found that one of the overarching problems causing female students at EHS to not take a computer science class, was that they had misconceptions of what the subject or class would entail.
- Because of these misconceptions, many students don't know CS fits an A-G requirement.
- Also many students thought that being involved in a computer science class would get in the way of their extra curricular activities.

Recommendations for Action Cycles

Computer Science Courses:

- Offer AP Computer Science A
- In-class wireless mice
- Wireless color printer w/ endless supply of color ink and paper
- Offer MiFi (Mobile Hotspot)
- Check-out school laptops
- Projector to display students work & for promoting Computer Science courses.

Promoting:

- Create promotional videos about Computer Science including:
 - CS course options & courses that count as an A-G course.
 - Career choices
 - Speakers with different background and gender.
- Presentations for incoming freshmen during Jump Aboard and Club Rush.
- Guest speakers visit EHS

Clubs:

- Improve Computer Science club by funding snacks, field trips, technology, mentors, and hour of code presentations.
- Collaborate with local groups including: UCSD Create, Qualcomm, etc.

Thank You!



Abstract

Our study focused on why the percentage of female students at EHS taking a computer science class is lower than the percentage of male students. We gathered data through a Google Forms survey, and our sample size was 347 voluntary responses. The survey was 13 questions long, and was incentivized with a gift card raffle. Our key findings were that girls were disproportionately involved in computer science because of problems with their schedule and a lack of interest in STEM. Our findings helped us figure out suggestions for how our school can better promote CS to women.