

Last edited: 11/10/20

CS Research at Rancho Buena Vista

I. Data Analysis

Raw Data:

Table #1: RBV 2018-2019 Enrollment by Ethnicity and Grade

Ethnicity	<u>TOTAL</u>	9th	10th	11th	12th
African American	42	14	9	8	11
American Indian or Alaskan Native	13	7	3	1	2
Asian	57	15	14	9	19
Filipino	39	12	13	6	8
Hispanic	1277	355	339	308	275
Pacific Islander	21	5	6	5	5
White	548	150	132	125	141
2+ Races	104	37	23	21	23
<u>TOTAL</u>	2101	595	539	483	484

Raw Data:

Table #2: Survey Demographic by Ethnicity and Grade; Uncertainty ± 3 (students)

Ethnicity	<u>TOTAL</u>	9th	10th	11th	12th
African American	21	5	3	10	3
American Indian or Alaskan Native	8	1	2	1	4
Asian	12	1	1	3	7
Filipino	5	1	0	3	1
Hispanic	229	50	78	55	46

Pacific Islander	3	0	2	1	0
White	125	38	21	42	24
2+ Races	20	5	4	6	5
<u>TOTAL</u>	423*	101	111	121	90

**Note: Outliers 1 N/A, 1 Prefer not to say, and 1 Greek are not included in data analysis*

Processed Data:

Table #3: Ethnicity Percent Average Compared to Census (How the number of students in one ethnicity compare to the number of students totaled); Average Percentage Difference: 1.98%

Ethnicity	RBV School Enrollment	Survey	Percentage (%) Difference
African American	2.0%	5.0%	+3.0%
American Indian or Alaskan Native	0.6%	1.9%	+1.3%
Asian	2.7%	2.8%	+0.1%
Filipino	1.9%	1.2%	-0.7%
Hispanic	60.8%	54.1%	-6.7%
Pacific Islander	1.0%	0.7%	+0.3%
White	26.1%	29.6%	+3.5%
2+ Races	5.0%	4.7%	-0.3%
Total Census	2101 (100%)	423 (100%)	

Processed Data:

Table #4: Grade Percent Average Compared to Census (How the number of students in one grade compare to the number of students totaled); Average Percentage Difference: 3.05%

Grade	RBV School Enrollment	Survey	Percentage (%) Difference
9th	28.3%	23.9%	+4.4%
10th	25.7%	26.2%	-0.5%

11th	23.0%	28.6%	-5.6%
12th	23.0%	21.3%	+1.7%
Total Census	2101 (100%)	423* (100%)	

**Note: Data may not be accurate on account of human error, therefore Uncertainty ± 5 (students)*

Evaluation:

Since the demographic percent averages from both the School Enrollment Data and our Survey Data are relatively similar, give or take 3% (a reasonable difference given how little data we collected with only 426 students compared to the 2,102 enrollment census), it can be said that the student demographic we collected from our survey accurately reflects the demographic of students at RBV. Significantly, this means that when examining the data from our survey we can assume the analyses and observations shown are in relation to the entire school population of RBV. Therefore, inferences, hypotheses, recommendations, etc. made can be regarded towards the whole school.

Raw Data:

Table #5: CS-Related Data on Whole Survey Demographic (426 students)

Grade	CS Interest	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	64	36	32	37
10th	46	21	14	33
11th	65	29	16	57
12th	67	29	17	54
TOTAL	242	115	78	181

Raw Data:

Table #6: CS-Related Data on Students Interested in CS (115 students)

Grade	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	27	32	28
10th	14	16	25

11th	14	21	37
12th	16	21	39
TOTAL	71	90	129

Processed Data:

Table #7: CS-Related Data Average on Whole Demographic by Grade

Grade	CS Interest	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	26.4%	31.3%	41.0%	20.4%
10th	19.0%	18.3%	17.9%	18.2%
11th	26.9%	25.2%	20.5%	31.5%
12th	27.7%	25.2%	21.8%	29.8%
TOTAL	242 (100%)	115 (100%)	78 (100%)	181 (100%)

Processed Data:

Table #8: CS-Related Data Average on Students Interested in CS

Grade	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	38.0%	35.6%	21.7%
10th	19.7%	17.8%	19.4%
11th	23.9%	23.3%	28.7%
12th	22.5%	23.3%	30.2%
TOTAL	71 (100%)	90 (100%)	129 (100%)

Evaluation:

Even though a total of 242 students state interest in computer science, only 90 have taken outside RBV computer science activities and 71 within the school, which means that out of 242 people, a meager 37.2% has done outside CS and a worse 29.3% has done CS within RBV. Additionally, only 129 (53.3%) even know of any computing or coding education found at RBV, meaning that approximately half of students who are most likely to partake in computer science at school have no knowledge of where to learn it. Lack of familiarity regarding RBV CS courses is furthered by

the fact that 245 students from the whole survey demographic are unknowledgeable of CS activities at RBV, equaling a total of 57.5% of the school. Notably, an assumption can be made that those who are unknowing of school CS opportunities are less likely to be interested in CS due to ignorance, for one cannot possess intrigue on a subject they do not know or are unaware of. Regarding instances where students learn about computer science outside of school, interest will most likely fade away when chances of partaking in CS are limited, such as when the school supposedly does not offer them, or encourage CS well enough. Therefore, the possibility for more students to take CS is lessened by the mere fact that RBV CS opportunities are poorly promoted to school students.

Raw Data:

Table #9: CS-Related Data on Hispanic Females (122 students)

Grade	CS Interest	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	9	1	6	11
10th	11	0	4	6
11th	16	5	10	18
12th	23	9	9	21
TOTAL	59	15	29	56

Raw Data:

Table #10: CS-Related Data on Hispanic Females Interested in CS (59 students)

Grade	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	1	0	5
10th	3	10	0
11th	5	0	12
12th	5	11	14
TOTAL	14	21	31

Processed Data:

Table #11: CS-Related Data Average on Hispanic Females by Grade

Grade	CS Interest	CS Inside RBV	CS Outside RBV	Familiar with CS in RBV
9th	15.3%	6.7%	20.7%	11
10th	18.6%	0%	13.8%	6
11th	27.1%	33.3%	34.5%	18
12th	39.0%	60.0%	31.0%	21
TOTAL	59 (100%)	15 (100%)	29 (100%)	56 (100%)

Evaluation:

Only 59 (48.4%) out of 122 hispanic female students surveyed show interest in computer science, 8.4% less than the overall total of 242 (56.8%) students showing interest out of 426. This means that more hispanic female students are uninterested in computer science than the demographic total of all students in the survey. Furthermore, 56 (45.9%) out of 122 know of RBV CS courses, meaning that less than half of all hispanic female students surveyed know of the opportunities for computer science at school. Of those who have interest in the CS field, 21 (35.6%) have taken courses outside of the school, while only 14 (23.7%) have taken computer science courses within RBV. 31 (52.5%) are familiar with CS in RBV. Thus, approximately half of female hispanic students who are interested in computer science are unaware of the courses RBV has.

Significantly, the data suggests that lack of knowledge regarding RBV CS courses results in less hispanic female student representation within RBV computer science activities. The assumption is that students who do not know of a subject or chances for a subject will not be interested in said subject, since the foundation of piquing one's interest derives from knowing of the idea. As an example, if one has never heard of nanoengineering, the outcome of wanting to be involved in nanoscale materials and synthetic inorganic materials is not accomplishable, since interest cannot be formed without knowing the subject of interest. With over half of hispanic female students being unaware of any CS opportunities within the school, the fact that only 48% of the targeted demographic has any interest in computer science is unsurprising. To add further obstacles, approximately half of those even interested in CS in the first place are unknowing in RBV CS courses, meaning that an untapped 50% of hispanic female students who are most likely to partake in computer science do not have the chance to do so due to ignorance. Thus, a major factor to the lack of hispanic females in computer science opportunities at RBV is simply because of a lack of CS advocacy within the school.