

Quantitative Statistical Analysis – Athletics & Visual and Performing Arts

The PEEF Program Evaluator and the Research, Planning, and Accountability Statistician used statistical software called SPSS 17.0 to run independent t-tests, which compare the averages of a measure (in this case, attendance rate) between two samples. The attendance data as well as student demographics such as grade level and ethnicity were extracted from the SFUSD IT database. Two questions were addressed in these statistical tests:

- (1) Is there a significant difference of middle school student’s Fall 2008 attendance rates between students who participated in athletics and students who did not?
- (2) Is there a significant difference of middle school student’s Fall 2008 attendance rates between students who enrolled in at least one art class and students who did not?

(1) Athletics

Middle school students who participated in interscholastic athletic programs attended school at a significantly higher rate than students who were not involved in athletics. Extracting the Fall 2008 attendance snapshot from the district database the student athletes were identified and compared to non-athlete students. The significant statistical finding was specific to only certain ethnic groups that include: African American athletes attended 20 more days of school than African American non-athletes, Filipino athletes attended six more days of school than Filipino non-athletes, Latino athletes attended eight more days of school than Latino non-athletes, White athletes attended seven days more days of school than White non-athletes, and Other non-white athletes attended three days more days of school than Other non-white non-athletes. The difference between attendance rates was not statistically significant among American Indians, Chinese, Decline-to-State, Japanese, and Koreans.

Table 1 – Middle School Athletics Statistical Test Summary Results

Ethnicity	Athletes attendance percent* (sample number)	Non-Athletes attendance* percent (sample number)	Attendance percent difference (number of days out of 181 total school days)
Statistically <u>Significant</u> Groups			
African American	86.5% (328)	75.5% (850)	11% (20 days)
Filipino	95.6% (144)	92.3% (512)	3.3% (6 days)
Latino	91.6% (446)	87.0% (1976)	4.6% (8 days)
White	95.5% (231)	91.6% (669)	3.9% (7 days)
Other Non-white	93.8% (295)	92.3% (898)	1.5% (3 days)
Statistically <u>Non-Significant</u> Groups			
American Indian	90.0% (20)	81.3% (42)	11.3%
Chinese	96.9% (736)	96.5% (3224)	0.4%
Decline-to-State	95.0% (133)	94.3% (421)	0.7%
Japanese	95.5% (40)	93.8% (59)	1.7%
Korean	98.0% (39)	96.9% (43)	1.1%

*Note: The attendance rate is defined by the total number of present days divided by the total number of school days minus excused absences.

(2) Arts

Middle school students who enrolled in at least one art class compared to students who were not enrolled had significantly higher rates of attendance. Extracting the Fall 2008 attendance snapshot from the district database and identifying students who enrolled in at least one art class during the Fall 2008 semester statistical tests were ran comparing various student demographics such as grade level and ethnicity. Art students who fell into the following ethnic groups demonstrated significantly higher attendance compared to non-art students: African American art students attended three more days of school than African American non-art students, Chinese art students attended one more day of school than Chinese non-art students, Latino art students attended three more days of school than Latino non-art students, and Other Non-White attended one more day of school than Other Non-White non-art students. The difference was not statistically significant among American Indians, Filipinos, Japanese, Korean, Whites, and Decline-to-State students.

Table 2 – Middle School Art Students Statistical Test Summary Results

Ethnicity	Art students attendance rate* (sample number)	Non-art students attendance rate* (sample number)	Attendance rate difference (number of days out of 181 total school days)
Statistically <u>Significant</u> Groups			
African American	92.5% (506)	90.6% (640)	1.9% (3 days)
Chinese	99.3% (2234)	98.8% (1686)	0.5% (1 days)
Latino	96.0% (1258)	94.4% (1114)	1.6% (3 days)
Other Non-white	97.6% (669)	96.8% (502)	0.8% (1 days)
Statistically <u>Non-Significant</u> Groups			
American Indian	96.2% (27)	94.9% (33)	1.3%
Decline-to-State	98.4% (350)	97.9% (199)	0.5%
Filipino	97.8% (360)	97.2% (286)	0.6%
Japanese	98.5% (69)	97.9% (30)	0.6%
Korean	99.3% (38)	99.1% (44)	0.2%
White	96.9% (581)	95.9% (301)	1.0%

*Note: The attendance rate is defined by the total number of present days divided by the total number of school days minus excused absences.