

## COMPARISON SCHOOL RATING

The comparison school rating is a new feature within the school report card. It represents a school's overall rating as compared to schools from the same school type (i.e., elementary, middle, high and combined<sup>1</sup> schools) with similar student demographics. The comparison school rating is a complex measure that, in addition to its respective calculation, requires the calculation of the comparison school index and the determination of comparison groups. The following three sections provide a basic discussion concerning how the Oregon Department of Education (ODE) calculates the comparison school index, determines the comparison group, and calculates the comparison school rating for the school report card.

### *Comparison School Index*

Each school with sufficient student enrollment<sup>2</sup> has a comparison school index. The comparison school index is the critical determinant of a school's comparison group and an important contributor to the comparison school rating as well as the like-school averages on the school report card. The ODE derived the comparison school index from four demographic variables using principal components analysis (PCA). The four demographic variables are (1) the percent of students identified as economically disadvantaged, (2) the percent of students identified as ever English learners<sup>3</sup>, (3) the percent of students identified as belonging to an underserved racial/ethnic group<sup>4</sup>, and (4) the percent of students identified as mobile within the school year<sup>5</sup>. PCA is a multivariate statistical technique that applies a linear transformation to a number of similar variables (e.g., demographic variables) in order to produce a smaller set of uncorrelated and independent components (e.g., comparison school index). The aim of PCA is to retain the component(s) that explain the most variation in the original variables. ODE employs a PCA model that produces two components, and ODE uses the first component as the comparison school index. Thus, the comparison school index is

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<sup>1</sup> Combined schools are K-12 high schools.

<sup>2</sup> Schools with a student enrollment  $\geq 40$  students according to Spring Membership 2012-13.

<sup>3</sup> These are students who were ever eligible for or participating in a program to acquire academic English.

<sup>4</sup> These are students who are either American Indian/Alaska Native, Black/African American, Hispanic/Latino, or Native Hawaiian/Other Pacific Islander.

<sup>5</sup> These are students who experienced one or more of the following: (a) attended more than one Oregon public school during the school year, (b) entered the Oregon public education system late (i.e., after October 1<sup>st</sup>), (c) exited the Oregon public education system early (i.e., before May 2<sup>nd</sup> without earning a diploma, certificate, etc.), and (d) had significant gaps in enrollment during the school year totaling ten or more consecutive school days.

simply the weighted<sup>6</sup> linear combination of the four demographic variables that explains the largest amount of variability in those variables. Technical details concerning the PCA model, output, and calculation of the first component will be available in the forthcoming technical appendix.

*Comparison Group*

The procedure that ODE uses to determine a school’s comparison group is the following: (1) separate schools by type (i.e., elementary, middle, high and combined schools), (2) sort the comparison school index from lowest to highest using the Comparison School Index, and (3) select the 10 schools immediately above and 10 schools immediately below a school’s respective comparison school index. The comparison group will typically contain 20 schools; however, schools at the extreme ends of the comparison school index will have fewer than 20 schools because there are fewer schools above or below their comparison school index.

School Name	Comparison School Index
Sacagawea Elementary School	-1.404
Eleanor Roosevelt Elementary School	-1.400
Babe Didrikson Elementary School	-1.387
Margaret Mead Elementary School	-1.352
Roberto Clemente Elementary School	-1.341
Martin Luther King Jr. Elementary School	-1.340
Marie Curie Elementary School	-1.329
Rosa Parks Elementary School	-1.300
Marcus Whitman Elementary School	-1.294
Susan B. Anthony Elementary School	-1.292
George Washington Elementary School	-1.282
<b>Jackie Robinson Elementary School</b>	<b>-1.282</b>
Jason Lee Elementary School	-1.281
Ronald Reagan Elementary School	-1.280
Meriwether Lewis Elementary School	-1.275
Harriet Tubman Elementary School	-1.271
Abraham Lincoln Elementary School	-1.266
Clara Barton Elementary School	-1.241
John Adams Elementary School	-1.240
Hank Aaron Elementary School	-1.231
Helen Keller Elementary School	-1.226
William Clark Elementary School	-1.216
Louisa May Alcott Elementary School	-1.214

The table above shows the comparison group for a fictitious elementary school: Jackie Robinson Elementary School. Note that (1) all the schools in the table are from the same school type (i.e.,

<sup>6</sup> The weights for each of the demographic variables are the following: economically disadvantaged = .330, ever English learners = .341, underserved race/ethnicity = .370, and Mobility = .196.

elementary) and (2) the values within the comparison school index are in order from lowest to highest. The comparison group for Jackie Robinson Elementary School includes 20 schools and ranges from George Washington Elementary School to Eleanor Roosevelt Elementary School (i.e., the 10 schools above the comparison school index) and Jason Lee Elementary School to William Clark Elementary School (i.e., the 10 schools below the comparison school index).

### *Comparison School Rating*

Each school will receive a comparison school rating unless it (a) does not receive an overall rating or (b) does not have sufficient students to calculate a comparison school index. The comparison school rating represents a school's overall rating as compared to schools from the same school type with similar student demographics (i.e., similar comparison school indices). However, in lieu of a direct comparison between rating levels, the comparison school rating uses the weighted percent of points which determines the level for the overall rating. The weighted percent of points denotes the weighted points a school earns across all applicable rating components (i.e., achievement, growth, subgroup growth, graduation, and subgroup graduation). Thus, the comparison school rating is the comparison between a school's weighted percent of points<sup>7</sup> and the points for the schools in its respective comparison group.

The procedure that ODE uses to produce the comparison school rating is the following: (1) separate schools by type, (2) sort the comparison school index from lowest to highest, (3) compute the mean and standard deviation for the weighted percent of points of all schools in the comparison group including the focal school, (4) compute the z-score<sup>8</sup> for the focal school, and (5) transform the z-score into a percentile. Schools can receive one of three comparison school ratings: below average, about average, and above average. A comparison school rating of below average is a percentile  $\leq 33.33$ , about average is a percentile  $> 33.33$  and  $\leq 66.66$ , and above average is a percentile  $\geq 66.66$ . The table below shows the comparison school rating for a fictitious elementary school: Jackie Robinson Elementary School. The mean and standard deviation of the weighted percent of points for Jackie Robinson Elementary School and its comparison group are 76.75 and 12.73. Jackie Robinson

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<sup>7</sup> Some schools receive a rating penalty if they (1) fail to meet the participation target of 94.5% for one or more subgroups or (2) have a graduation rating of Level 1. ODE will lower a school's overall rating by one category if the school misses the participation target (e.g., Level 4 to a Level 3). Also, a school can have an overall rating of no higher than Level 2 if its graduation rating is Level 1. When either or both occur, ODE translates the new overall rating to the maximum weighted percent of points available for that rating level. For example, let's say an elementary school fails to meet the participation target and ODE lowers the overall rating from Level 5 to Level 4. The maximum weighted percent of points available for Level 4 is 86.9%. ODE would use this value as the weighted percent of points to calculate the comparison school rating.

<sup>8</sup> The z-score represents the number of standard deviations a value is from the mean.

Elementary School's z-score and percentile are -0.73 and 23.38 which results in a comparison school rating of below average.

School Name	Comparison School Index	Weighted Percent of Points
Sacagawea Elementary School	-1.404	72.5
Eleanor Roosevelt Elementary School	-1.400	93.3
Babe Didrikson Elementary School	-1.387	56.7
Margaret Mead Elementary School	-1.352	80.0
Roberto Clemente Elementary School	-1.341	45.0
Martin Luther King Jr. Elementary School	-1.340	70.0
Marie Curie Elementary School	-1.329	57.5
Rosa Parks Elementary School	-1.300	85.0
Marcus Whitman Elementary School	-1.294	80.0
Susan B. Anthony Elementary School	-1.292	75.0
George Washington Elementary School	-1.282	75.0
<b>Jackie Robinson Elementary School</b>	<b>-1.282</b>	67.5
Jason Lee Elementary School	-1.281	69.9
Ronald Reagan Elementary School	-1.280	90.0
Meriwether Lewis Elementary School	-1.275	99.2
Harriet Tubman Elementary School	-1.271	87.5
Abraham Lincoln Elementary School	-1.266	80.0
Clara Barton Elementary School	-1.241	75.0
John Adams Elementary School	-1.240	80.0
Hank Aaron Elementary School	-1.231	78.8
Helen Keller Elementary School	-1.226	81.3
William Clark Elementary School	-1.216	85.0
Louisa May Alcott Elementary School	-1.214	100.0

### *Other Comparison School Calculations*

For all other calculations, we pool all of the students in the comparison schools and calculate a rate for that combined group of students. For example, when we calculate the percentage of students meeting or exceeding in reading in comparison schools, we add together the total number of students meeting or exceeding in all 20 comparison schools and divide by the total number of tests in those 20 comparison schools.