

## Definitions

**Point Biserial** - The correlation between the right/wrong scores that students receive on a given item and the total scores that the students receive when summing up their scores across the remaining items. Point Biserial values range from -0.1 to +1.0. A large point biserial value indicates that students with high scores on the overall test are also getting the item right and students with low scores on the overall test are getting the item wrong. A low point biserial implies that students who get the item correct tend to do poorly on the overall test and the students who get the item wrong tend to do well on the test.

**Discrimination index** - reports the difference between the proportions of high and low scorers answering a dichotomous item correctly. High values are reputed to flag good items, low values bad. The Discrimination Index is calculated by subtracting the number of students in the top 27% of the class that answered the question correctly from the number of students in the lower 27% of the class that answered the question correctly. The result is divided by the number of students that made up the upper or lower group.

**KR20** (Kuder-Richardson 20) -is an estimate measure of reliability that shows how well the individual test questions correlate to each other. Reliability attempts to determine how much variability in test scores is a result of variability in students taking the test and not some other random error. The index ranges from 0.00 to 1.00. A value close to 0.00 means you are measuring many unknown factors but not what you intended to measure. You are close to measuring a single factor when your KR-20 is near 1.00.

**Median** - The median is the centre of a distribution. As a result of the median, half the scores are above the median while the lower half is below the median. For instance, the median of 1, 4, and 9 is 4. When there is an even set of numbers, the median is the mean of two middle numbers. Thus the median of the numbers 2, 4, 9 and 12 are  $(4+9)/2=6.5$ .

**Mean** - The Mean score is the average score on the test.

**Upper-Lower Count** - Top 27% of the class and the lower 27% of the class. Also used in calculating the Discrimination index

**Standard Deviation** - measures the spread of the data about the mean value. It is useful in comparing sets of data which may have the same mean but a different range. For example, the mean of the following two is the same: 15, 15, 15, 14, 16 and 2, 7, 14, 22, 30. However, the second is clearly more spread out. If a set has a low standard deviation, the values are not spread out too much.