NORMS:

Norms refer to information regarding the group performance of a particular reference on a particular measure for which a person can be compared to.

Norms mean standardized scores. Scores on the psychological tests are most commonly interpreted by reference to the norm that represents the test performance on the standardization sample. Norms always represent the best performance.

Basically, there are two purposes of norms:

1. Norms indicate the individual's relative standing in the normative sample and thus permit evaluation of his/her performance in reference to other persons.
2. Norms provide compared measures that permitted a direct comparison of the individual performance on a difference test.

Statistical concept:

1. **Frequency distribution:** A major object of the statistical method is to organize and summarize quantitative data in order to facilitate their understanding. A list of 1000 test scores can be an overwhelming sight. In that form, it conveys little meaning. A first step In bringing order into such a chaos of raw data is to tabulate the scores into a frequency distribution. A distribution is prepared by grouping the scores into convenient class intervals and tallying each score in the appropriate interval. When all scores have been entered the tallies are counted to find the frequency, or a number of cases, in each class interval. The sum of these frequencies will equal N, the total number of cases in the group.
2. **Graphical representation:** The information provided by a frequency distribution can also be presented graphically in the form of a distribution curve. On the baselines, or horizontal axis, are the scores grouped into class intervals; on the vertical axis are the frequencies or number of cases falling within each class interval. The graph has been plotted in two ways. In the histogram, the height of the column erected over each class interval corresponds to the number of persons scoring in that interval. In the frequency polygon, the number of persons in each interval is indicated by a point in the center of the class interval and across from the appropriate frequency. The successive points are then joined by straight lines.
3. **Central Tendency:** A group of scores can also be described in terms of some measure of central tendency. The most familiar of these measures is the average, more technically known as the mean (M), and it is found by adding all sores and dividing the sum by the number of cases (N). Another measure is the mode or most frequent score. In a frequency distribution, the mode is the midpoint of the class interval with the highest frequency. The third measure of central tendency is the median or middlemost score when all scores have been arranged in order of size. The medial is the point that bisects the distribution, half the cases falling above it and half below.
4. **Variability:** Further description of a set of test scores is given by measures of variability, or the extent of individual differences around the central tendency. The most obvious and familiar way for reporting variability is in terms of range between the highest and lowest score. T range, however, is extremely crude and unstable, for it is determined by only two scores. A single unusually high or low score would thus markedly affect its size. A more precise method of measuring variability is based on the difference between each individual's score and the mean of the group.

Types of Norms:

Developmental Norms

One way in which meaning can be attached to test scores is to indicate how far along the normal developmental path the individual has progressed. Developmental systems utilize more highly qualitative descriptions of behavior in specific functions, such as sensorimotor activities or concept formation.

Mental Age: The term "mental age' was widely popularized through the various translations and adaptations of the Binet-Simon scales, although Binet himself had employed the more neutral term "mental Level". In age scales such as the Bind and its revisions (prior to 1986), items were grouped into year levels. For example, those items passed by the majority of 7-years olds in the standardization sample were placed in the 7-year level, and so forth. A child's score on the test would then correspond to the highest year level that he or she could successfully complete In actual practice, the individual's tests below their mental age and passed some above it. For this reason, it was customary to compute the basal age, that is, the highest age at and below which all tests were passed. Partial credits, in months, were then added to this basal age for all tests passed at higher year levels. Mental age norms have also been employed with tests that are not divided into year levels. In such a case, the child's raw score is first determined. The mean raw scores obtained by the children in each year group within the standardization sample constitute the age norms for such a test. The mean raw score of the e8-year old children, for example, would represent the 8-year old raw score then her or his mental age on the test is 8 years. All raw scores on such a test can be transformed in a similar manner by reference to the age norms.

Grade Equivalents: Scores on educational achievement tests are often interpreted in terms of grade equivalents. Grade norms are found by computing the mean raw score obtained by children in each grade. Thus, if the average number of problems solved correctly on an arithmetic test by the fourth graders in the **standardization** sample is 23, then a raw score of 23 corresponds to grade equivalents of 4. Intermediate grade equivalents, representing fractions of a grade, are usually found by interpolation, although they can also be obtained directly by testing children at different times within the school years. For example, 4.0 refers to average performance at the beginning of the fourth grade. Grade norms are also subject to misinterpretation unless the test user keeps firmly in mind the manner in which they were derived.

Test norms

Test norms consist of data that make it possible to determine the relative standing of an individual who has taken a test. By itself, a subject's raw score (*e.g.*, the number of answers that agree with the scoring key) has little meaning. Almost always, a test score must be interpreted as indicating the subject's position relative to others in some group. Norms provide a basis for comparing the individual with a group.

Numerical values called centiles (or percentiles) serve as the basis for one widely applicable system of norms. From a distribution of a group's raw scores the percentage of subjects falling below any given raw score can be found. Any raw score can then be interpreted relative to the performance of the reference (or normative) group—eighth-graders, five-year-olds, institutional inmates, job applicants. The centile rank corresponding to each raw score, therefore, shows the percentage of subjects who scored below that point. Thus, 25 percent of the normative group earn scores lower than the 25th centile; and an average called the median corresponds to the 50th centile.

Another class of norm system (standard scores) is based on how far each raw score falls above or below an average score, the arithmetic mean. One resulting type of standard score, symbolized as *z*, is positive (*e.g.*, +1.69 or +2.43) for a raw score above the mean and negative for a raw score below the mean. Negative and fractional values can, however, be avoided in practice by using other types of standard scores obtained by multiplying *z* scores by an arbitrarily selected constant (say, 10) and by adding another constant (say,

50, which changes the *z* score mean of zero to a new mean of 50). Such changes of constants do not alter the essential characteristics of the underlying set of *z* scores.

Reference:

Anastasi, A. (1982). *Psychological testing*. New York: Macmillan.