Quadrant-I (e-text)

Details of Module and its structure

Module Detail	
Subject Name	Education
Course Name	Assessment for Learning
Course Code	EDU503
Module Name/Title	Norms: meaning, types, uses with strength and weakness with respect to the type of norm.
Module Code	AFL012
Pre-requisites	
Learning Outcomes	After going through this lesson, the learners will be able to: 1. Discriminate the meaning of norms and standards. 2. Reflect on characteristics of norms. 3. Deliberate on different types of norms. 4. Construct different types of norms.
Keywords	

1. Development Team

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Table of Content

1. Introduction

A norm represents a typical level of performance for a particular group. A raw score on any Psychological test alone is meaningless unless we have additional interpretive data. Therefore, the score on psychological test are most commonly interpreted by reference to norms that represent the test performance of the standardised sample. Norms are empirically established by determining what parsons in a representative group actually do on a test. In order to ascertain more precisely the individual's exact position with reference to the standardised sample, the raw score is converted into some relative measure. These derived scores serve two purposes i.e. they indicate the individual's relative standing in the normative sample and provide comparable measures that permit a direct comparison of the individuals performance on different tests. 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. Usually, 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. We will discuss about norms of a test and its various aspects.

In a test, norm is that score which has been obtained by a group. In other words, "By norms we mean specimen of work which represent the commonest type of work for the whole group in question. In the field of research, when different tests are administered and scoring is given. It is to draw some inferences on the basis of these scores, unless we have a basis for them. On the basis of norm, we can compare two candidates in the test, and can find out the place of a candidate in the group. We can apply norm in order to eradicate interpretive errors. Norms have been defined as the standard, performance of a group of pupils in a test. It is essential to keep in mind that there is difference between norm and standard. Norms indicate the actual achievement of students at standardized level, while standard indicate the desired level of performance. Norms are such standards with which we can compare any scores for analysis, or deduce our conclusions from them. In other words, norms are the average scores of actual measurement in a test

administered on a specific group of students. Norms are averages or values determined by actual measurement of a group of persons who are the representatives of specific population. While standard possesses a desirable objective, which can be less or more than the obtained norm. To prepare norms, we administer a test on a large population in order to change the scores into percentiles or standard scores. Norms are used as the central tendency of scores of a certain group. Some common definitions of norm are -Norms are quantitative criterion for different levels; Norms are averages determined under prevailing conditions and Psychological test norms represent the test standardization.

2. Characteristics of Norms

It is essential for norms of a test to have the following essential qualities: novelty, representation, meaningfulness and comparability.

Novelty: By being novel or up-to-date is meant that the norms should not be outdated i.e. norms should not be constructed on the basis of test scores which were administered a long way back because time interval can effect change in students' abilities. For this reason, if an intelligence test constructed in 1990 will not be suitable to analyze scores of students on a test administered in 2004, as it would not be proper. Therefore, the norms should be changed from time to time so that they remain novel and up-to-date.

Representation: By representation of norms is meant that norms should be developed from the scores obtained from the representative group, whose scores have to be analyzed. Therefore, if some skill of class 9 students has to be analyzed, then the norms too should be developed on the basis of scores obtained from class 9 students. Besides, these students should be equal to other students in other traits. Test norms should be constructed on the basis of scores obtained from a large group. A small group cannot represent the whole population adequately, due to which a norm developed on a small group can give incorrect interpretation

Meaningfulness: By meaningfulness is meant the type of norms. The evolved norms should be dependent on the test objectives and measurable traits. Where traits increase with an increase in age, it would be proper to develop

age norms or grade norms. However, if personality has to be measured, then percentile norms or standard score norms should be applied. In the same way, if the aim of a test is to ascertain the desirability of a student's physical or educational achievement, then it would be more adequate to use age or grade norms, but if the aim of a test is to find out the position of the student in a large group, then the percentile and standard norms can be used.

Comparability: Comparability is an important characteristic of norms. Test norms should be mutually comparable, only then these norms can be used to compare different students. Besides, norms should be sufficiently described, that is, the different reference points should be clearly explained so that the students' ability can be clearly explained in words.

3. Types of Norms

Norms can be classified from different perspective but in this module mainly four types of norms i.e. Age norms, Grade norms, Percentile norms and Standard score norms are discussed below:

3.1 Age Norms

This type of norms was used in Binet's intelligence tests. The basic assumption in this type of norms is that variable should increase with the age. The variable must increase with the age. By age norms is meant the average scores of students of different ages. Age norms find out only those variables, which increase with age, such as height, weight, intelligence, reading ability, vocabulary, mental age etc. Supposing, we have to find out height age norm for this, a test is administered on a group of students of different age groups and the scores are written down on the test. The average of scores obtained by students of different age groups is called the norm for that age group. For example, if we want to know the height norm for students of 12-year age group. For this, we shall choose some students of 12 years of age who should represent the entire population. Then their height will be measured and average will be calculated. This average will be called the height age norm for all 12-year students. Now we can measure a student's height and analyse it in accordance with this norm. If his height is more than this norm, then he will be called a taller than average boy. For example, if the average height of 15-year old age group is 135 cm and Nishant's height is 145

cm, then we can say that Nishant is taller than his average age group or that he is taller as relative to his age. On the other hand, if the average height of 16-year boys is 145 cm, then we can say that his height is equal to 16-year age group. In the field of intelligence measurement, the concept of mental age is a form of age norms. If a student is able to solve all questions meant for an 18-year age group, then he will be said to have 18-year mental age, even if his physical age is merely 15 years. In all intelligence tests, norms are presented in the form of mental age and norms in achievement tests are presented in the form of educational age. Age norms can be easily established. This is the reason that they are widely used in educational field. Age or grade norms locate the pupil in terms of age or grade groups, but not necessarily with pupils of his own age and grade (Baron and Bernard),

Uses of Age Norms

i. Age norms can be easily established.
ii. These norms are widely used in educational field
iii. These norms are easy to use.
iv. These norms are more suitable when variables increase along with age; such as weight, intelligence, educational achievement etc.

Weakness of Age Norms

i. Main weakness of age norms is that the development and growth of each child is not uniform in all age groups. Consequently, the difference in norms is not uniform for different age groups.
ii. These norms cannot be used in personality tests, interest tests, aptitude tests and attitude tests etc.
iii. The unit of age is not suitable to express the level of ability during adolescence and youth.
iv. The selection of representative sample is a difficult task.
v. Some traits do not show mental development with age, such as vocabulary increases with age, but maze tracing is obstructed after adolescence. Therefore, this type of traits cannot be shown by age norms.
vi. These norms are appropriate only for the students up to the age group of 20 years.

3.2 Grade Norms

Grade norms are similar to age norms, with the only difference that while age norms are related with age, grade norms are related with class. They are also called class norms. By grade norms in a test is meant the average scores of students of different classes. This is administered on a classified student in the school. Like age norms, the other variable should be such which increases with the age.

To ascertain grade norms, a test is administered on students of different classes. The students selected from a specific class represent the entire population of that class. Then the scores of students for each class are found out. The average scores for each class are called grade norms for that class. Supposing, we want to establish grade norms in science. Representative groups are taken from different classes, as VII, VIII, IX and X, and their average scores are found out. Now, the students whose present achievement has to be measured is administered the test and his scores are explained on the basis of grade norms. If a VII grade student is able to achieve the average score of IX grade, then he will be considered a strong student. On the contrary, if a IX grade student attains the average score meant for a VII grade, he will be called a weak student.

Uses of Grade Norms

i. Grade norms are mostly established for achievement tests.
ii. These are related with the performance of average students of all classes.
iii. Grade norms are very important for teachers.
iv. These are used to analyse the performance and ability of students on their basis, and can ascertain the position of a certain child in the class.

Weakness of Grade Norms

i. The variance in grade norms is not very explicit.
ii. The rate of educational achievement, intelligence development and other variables is not uniform as per the grade.
iii. Grade norms, like age norms are not uniform.
iv. These norms can be used only in formal educational institutions.

v. If students of the same age group have to compared, then grade norms do not assist us. For example, we can compare 8-year-old Sumit with other boys aged 9, 10 or 11 years, but not with many other as old as Sumit. In such a situation, students are compared with one another based on percentile norms.

3.3 Percentile Norms

By percentile norms in a test is meant the different percentiles obtained by a large group of students. In other words, percentile norms are those scores, the number of students obtaining scores below than that is equal to the percentage of such students. For example, 75th percentile norm tells that 75% students have scored below this score and only 25% students have obtained scores above it. In calculating percentile norm, a candidate is compared with the group of which he is a member. By percentile scores is meant the grade of a candidate in percentiles. Supposing 100 individuals are taking part in a race. One of them runs the fastest and stands first. He is better than 99 individuals, so his percentile value is 99. The individual standing second in the race is better than 98 individuals, so his percentile position is 98th. The distance between the first and second individuals does not influence their percentile positions. No other individual follows the individual running last, so his percentile position will be zero. In the same way, under educational situations, when several students of the same or different schools are studied, it is quite convenient and useful to transform their sequences into percentile ranks. In ordinary words, percentile is the point on the scale below which a fixed percentage of the distribution falls.

In order to know percentile value, a test is administered on a large group and different percentile values are calculated based on scores obtained by students. These percentile values are percentile norms. Because, it is possible to use them on all individuals of the common group under all circumstances, so it can be said about them that percentile norms provide a basis for interpreting the score of an individual in terms of his standing in some particular group.

Uses of Percentile

i. They can be analysed easily.

ii. It is not necessary to administer the test on a sample representative group, as is done in other tests. Therefore, no hypothesis has to be formulated for these norms. So, these are used widely.

iii. These norms are useful in all types of circumstances, such as educational, industrial, military fields etc.

iv. Percentile norms are easy to develop.

v. They can be used to meaningfully express the scores with different units and numerical standards.

vi. These are used to determine the findings of personality tests, IQ tests, attitude tests, aptitude tests etc.

Weakness of Percentile Norms

i. It is not possible to carry out statistical analysis of these norms.

ii. The percentile scores of different tests cannot be compared unless the groups on which they were administered are not comparable; for example, if in a personality test, percentile norms have been developed for adolescent girls taken from a large group, then the scores of all adolescent girls can be compared with these.

iii. In normal situations, percentile norms tell the relative position of each individual, but it does not make out the difference in scores between two individuals.

iv. Percentile norms are often confused with percent scores.

v. The relative position of an individual is ascertained on the basis of these norms. It is not possible to analyse actual ability or capability of an individual objectively.

vi. The units of percentile scores are not uniform. If the details of actual scores are almost common, then there is much difference in changing proximate scores into percentile values, while there is not much difference in changing scores at extreme ends.

3.4 Standard Score

The greatest shortcoming of percentile norms is that the units of scores is not equal in this, that is, the two consecutive percentiles are not equally or uniformly distanced. For example, the difference between 30th and 40th percentiles are not equal to the difference between 60th and 70th percentiles.

Due to this shortcoming, these norms cannot be used to compare the differences among different candidates. Therefore, test-makers look for such units which are meaningful throughout the entire expanse. From this standpoint, the standard score norms are widely used. These norms are also called Z score norms.

By standard score norms are meant to change the raw scores of candidates into standard scores. This type of norms is found out with the help of standard deviation (S.D. or σ). This standard deviation is a measurement of the expanse of scores of a group. Standard norms are based on normative group. These norms analyse the achievement of an individual based on his scores in the context of the particular group. Because these express uniform units, so they are different from percentile norms.

Uses of Standard Score

Standard Score can be used to compare raw scores that are taken from different tests especially when the data are at the interval level of measurement.

Weakness of Standard Score

The main disadvantage of standard scores is that they always assume a normal distribution. But if this assumption is not met, the scores cannot be interpreted as a standard proportion of the distribution from which they were calculated. For example, if the distribution is skewed, the area with the standard deviation of 1 to the left of the mean is not equal to the area within the same distance to the right of the mean.

4. Summary

In this module we have discussed about the meaning, characteristics, different types of norms and their uses with strength and weakness. The norms are thus empirically established by determining what person in a representative group actually do on the test. Any individual's raw scores obtained by the standardization sample, to discover, where he or she falls in that distribution. Characteristics of norms includes novelty, representation, meaningfulness and comparability. There are four kinds of norms i.e. Age norms, Grade norms, Percentile norms and Standard score norms. To establish age norms, the Mean of raw scores obtained by all in the same age

group within a standardized sample is taken. Grade norms are found by computing the Mean row score obtained by students in particular grade. Percentile scores represent the percentage of persons in the standardised sample who fall below a given raw score. They indicate an individual's relative position in the standardized sample. Standard score expresses the individual's distance from the Mean in terms of the standard deviation of the distribution. They are obtained by linear or nonlinear transformation of the original raw scores. T Scores and Z scores are known as standard scores.

Quadrant-III

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Quadrant-IV (Self-Assessment)

1. Norms indicate the actual achievement of _____ at standardized level.

   A. Students
   B. Teachers
   C. Principals
   D. Supervisors

2. The group of individuals on whom, norms are prepared are called _____.

   A. Age group
   B. Reference group
   C. Percentage group
   D. Grade group

3. Grade norms are also called as _____.

   A. Age norms
   B. Class norms
   C. Percentile norms
   D. Score norms

4. _____ are those scores, the number of students obtaining scores below than that

   is equal to the percentage of such students.

   A. Percentile norms
   B. Age norms
   C. Grade norms
   D. Standard norms

5. _____ are based on normative group

   A. Age norm
   B. Grade norm
   C. Standard norm
   D. Percentile norms

6. The ____ is a measurement of the expanse of scores of a group.

   A. Mean
   B. Standard deviation
   C. Median
   D. Mode

7. T-score was first used by _____.

   A. Mc Call
   B. R.V. Cattell
   C. Kelly
   D. Lamark

8. Which of the following is not true regarding characteristics of norms?

   A. Novelty

   B. Representation

   C. Meaninglessness

   D. Comparability

9. Grade norms are similar to _____ norms, with the only difference that while age norms are related with age, grade norms are related with _____.

10. The greatest shortcoming of percentile norms is that the units of scores is not _____.

11. The basic assumption in the _____ norms is that variable should increase with the _____.

12. Novelty of the norms mean that the norms should be constructed on the basis of test scores which were administered a long way back because time interval can't effect change in students' abilities. (True/False)