Uses of Measures of Central Tendency in Educational Situations

(a) Uses of Mean

i. When the distribution is symmetrical, *i.e.* the scores are uniformly distributed mean is the centre of gravity of the distribution. In this case, mean and median have the same value and other scores contribute to its determination.

ii. Mean is the most stable measure of central tendencies. It is often in demand at the time of statistical calculations.

iii. Mean has the greatest stability and when a measure of central tendency with the greatest stability is needed it is used.

(b) Uses of Median

i. When the exact midpoint *i.e.* 50% of the point of distribution is wanted, then Median is used.

ii. It is required when there are extreme scores which would markedly affect the mean. Extreme scores do not affect the median. *E.g.* scores in the series 8, 9, 10, 11, and 40, median will be 10.

iii. It is used when the distribution has an upper or lower class interval of unspecified length.

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(c) Uses of Mode

i. Mode is used when a quick and appropriate measure of central tendency is required.

ii. It is used when the measure of central tendency should be the most typical value.

Merits of Mean

i. It is rigidly defined. Its value is always definite.

ii. It can be accurately determined with the help of various methods.

iii. A mean is an algebraic measure which is capable of further algebraic treatment. It is useful in computing standard deviation, correlation etc.

iv. It is simple to follow. It is easily understandable.

v. If the number of items in a series is large, the mean provides a good basis for comparison.

vi. It is easy to calculate.

Demerits of Mean

i. If a single item is missing, the mean cannot be calculated. Mean cannot be computed by merely observing the series, If the sample is large.

ii. Mean is unduly affected by the extreme items, if the number in a series is very small.

iii. Mean can be used only with distribution that gives absolute scores. It cannot be used with scores expressing grades such as A, B, C, D...

Merits of Median

i. Median is rigidly defined.

ii. Median can be calculated graphically.

iii. It is easy to compute and individual understands it easily.

iv. It is used when exact midpoint of distribution is desired.

v. It is not affected by the values of the extreme items.

vi. It can be located by mere inspection in certain cases.

Demerits of Median

i. Median is less stable measure than mean.

ii. Median cannot be used for computing other statistical measure such as S.D. or co-efficient or correlation.

iii. Median cannot be computed unless the items are arranged in an ascending order.

iv. If there are big or small items of great importance in series, the median would be unsuitable average, for it ignores the values of extreme items.

We do not get the aggregate when the median is multiplied with the number of the items.

Merits of the Mode

i. Mode is very easy to calculate.

ii. Mode is not affected by the values of extreme items.

iii. Mode is often a really typical value.

iv. Mode can be located by graphic method.

v. For the determination of a mode, it is not necessary to know the values of all items of series.

Demerits of the Mode

i. A mode is indefinite and ill-defined.

ii. Mode is not capable of further mathematical treatment.

iii. Mode is not based on all the observations of a series.

iv. When we prepare the frequency distribution, the mode is affected by changes in the grouping scheme.

v. Mode may give wrong conclusions, if no score is repeated in ungrouped data.