CHAPTER II
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2.0 INTRODUCTION

In order to have the proper idea of the terms of terminology, it is essential for an investigator to look into the meaning, concepts and definitions given by various eminent psychologists and educationists. The clear concept would definitely help the investigator to collect and coin statements depicting the various degrees of spectrum regarding the term attitude. The concept of attitude and the measuring techniques of attitude have been viewed along with the development process. Thus, this would give clear picture of the theoretical perspectives.

2.1 ATTITUDE : MEANING AND CONCEPT

People often speak about attitude in their everyday life. They ask what the attitude of a particular person is towards another person, his job, his employer,
the subject etc. and they are told that it is one of dislike, of hate, of fondness, of affectiveness, of disgust, of preference or indifference.

Psychologists, Sociologists, Educationists and even Politicians have had their concern with attitudes. Some have made comparison of attitudes of members of different groups. Some have reported upon the theory and nature of attitudes and way in which attitudes are defined. Many are interested in the methods by which attitude might be measured. Thus, the concept of attitude occur in both scientific investigation and common talk.

The concept of attitude is an old one in Psychology and we tend to associate it more directly with the area of social psychology.

The term 'Attitude' like most abstract terms in the English language, has more than one meaning.

Derived from the Latin word 'Aptus', it has on one hand the significance of fitness or connotes a subjective or mental state of preparation for action. On the other hand, an attitude is an effective by product of an individual's experience and has its base in inner urges, acquired habits and environmental influences by which an individual is surrounded. In other words the attitude is a result of person's desires and group stimulations. It is the part of an individual's personality. But an individual
is affected by the attitude and behaviour of the groups in which he is associated.

There are many opinions about the attitude but one can define as a periodical measure of one's own mental state. The attitude is a concept of belief. One believes that something is wrong. One does or does not favour a particular object. One accepts some path or rejects it. All these beliefs, favourableness and acceptance are the expression of an attitude.

Atkinson¹ defines attitudes a "reaction that may or may not reflect the individual's operations of his own behaviour. Attitudes are often called unspoken opinion."

Hariman² states: "An attitude is defined as a mental set to respond to a situation with proper reaction, whereas sets may be temporary matters, attitudes are more or less stable."

According to Walter³, "An attitude means mental or neural state of readiness organized through experience.

exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related."

Thurstone and Chave⁴ define attitude as, "The sum total of man's inclinations and feelings, prejudices or biases, preconceived notions, ideas, fears, threats and convictions about any specific topic."

A.L. Edwards⁵ defines attitude as "the degree of positive or negative effect associated with some psychological object."

According to Remmers⁶, "An Attitude may be defined as an emotionalized tendency, organized through experience, to react positively or negatively towards psychological object or feelings or against something."

G.W. Allport⁷ defines attitude as "Mental and

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neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects with which it is related.

Attitudes always imply a relationship between the persons and objects. In other words, attitudes are not self-generated psychologically. They are formed or learned in relation to identifiable reference, whether these persons, groups, institutions, objects, values, social issues or ideologies.

Attitudes are not temporary states but are more or less enduring once they are formed. Of course, attitudes do change; but once formed they acquire a regulatory functioning of the organism or with every first noticeable variation in stimulus conditions.

2.2 IMPORTANCE OF ATTITUDE

The attitude of an individual towards his work affects his worthwhileness in activity. Attitudes are considered as an important motivator of behaviour.

Attitudes play an important role in learning. From the point of view of learning attitudes are important as much as they facilitate further learning and thus, certain within themselves the source of further motivation. Attitude must be aroused and developed for a child and
every school cannot escape from its responsibility of organizing a deliberate plan and programme influencing for good attitudes of the child.

The child should not be permitted to do completely as he wishes. He should be stimulated towards desirable activity through the arousal of interest in worthwhile projects. Constructive, objective attitudes during the childhood serve well during adolescence. The attitude of the teacher, of the parents or of a group leader is important. Each should display the kind of objective but understanding attitude that will be a good attitude for the child to imitate.

Education of the child, therefore, must include the development of right attitudes as well as the acquisition of behaviour habits that are socially desirable. Not only rules and regulations concerning good conduct and effective good habits should be taught, but they should be understood and appreciated in the light of their values to the individual and society.

Attitudes affect the behaviour of the students. Therefore, the cultivation of favourable attitude towards subject help him learning. Promoting favourable attitudes, therefore, in an individual is an asset both to him and society. The individual should be aided in making deliberate choice of behaviour in harmony with his own and
society's betterment. He should strive to create favourable attitude and eliminate unfavourable ones.

2.3 MEASUREMENT OF ATTITUDE

To use the concept of attitude in understanding and predicting action, one needs reliable and valid measurement. The measurement of attitudes, like the measurement of all psychological determinants is necessarily indirect. Attitude of an individual towards any object can be measured only on the basis of inference drawn from the responses of the individual towards the object, his overt actions and his verbal statements of beliefs, feelings and disposition to act with respect to the object. Two methods have been employed to measure attitude, they are:

1) Method of Direct Questioning.
2) Method of Direct Observation of Behaviour.

Both the methods are described here in short.

2.3.1 Method of Direct Questioning

In this method, individual is asked directly how he feels about the object. By means of direct questioning one might be able to classify individuals into three groups:

(1) Those with favourable attitudes, (2) Those with unfavourable attitudes and (3) those who may that they are
doubtful or undecided about their attitudes towards the object. This technique may be employed as a schedule or questionnaire of the open or close form. It may be employed as the interview process in which the respondent expresses his opinion only.

2.3.2 Method of Direct Observation of Behaviour

This method is to observe the behaviour of individuals with respect to a psychological object, rather than to ask direct questions about how they feel about the object. There are limitations to this approach. The researchers interested in the attitudes of a large number of individuals towards the object may not have the opportunity to observe in detail the behaviour of all individuals in whom he is interested. In many cases an individual may conceal his real feeling and express socially acceptable opinions. Individuals are all aware of situations in which they have acted contrary to the way in which they felt because of various reasons. If a politician kisses babies in public, his behaviour may not be a true expression of affection towards infants. Attitudes, as factors influencing or determining behaviours may be one of many such, and not necessarily the most prepotent factors. If one expects to predict behaviour from feelings or attitudes, then those other factors must be taken into account. And similarly, if one expects to infer attitudes or feelings from direct
observations of behaviour, one must always consider the possibility that our inference may be incorrect simply because the behaviour may be determined by factors other than the individual's feelings.

2.4 ATTITUDE SCALE

Of all the tools and techniques for the measurement of attitude, by far the most widely used and the most carefully designed and tested is the attitude scale, which typically yields a total score indicating the direction and intensity of an individual's attitude towards the object. An attitude scale consists of a set of statements or items to which the person responds. Each of the statements is assigned with a set of numerical values. The pattern of an individual's responses provides a way of inference, something about one's attitude.

The development of attitude scale has involved several techniques. Each has its own merits and demerits. Two of these techniques have been used extensively in attitude or opinion research. They are:

1) Thurston's Method of Equal Appearing Intervals.
2) Likert's Method of Summated Ratings.
2.4.1 Thurston's Method of Equal Appearing Intervals

This method of attitude assessment is known as the Thurston Technique of Scale Values or The Method of Equal-Appearing Intervals. The step in constructing the Thurston type scale is to collect the statements that expresses various points of view towards the particular object. These statements are edited and then submitted to a panel of judges and each one of them arranges the statements in eleven groups, ranging from the most favourableness to the most unfavourableness in position. This sorting by each judge yields a composite position for each of the items. The median of the judged locations for a statement is its scale value. Statements that are judged to be ambiguous or irrelevant to the continuum are eliminated.

Before inclusion in the final scale, each statement is analysed for consistency with the general attitude found by the total score. For example, on a scale to determine attitudes towards religion, if it is found that many persons having an unfavourable attitude check a statement that is apparently favourable, then that item is considered irrelevant and is discarded. Statements having approximately the same values in the scale should show high consistency in degree of endorsement by each subject. This is essentially a simple method of item analysis. Ambiguity of an item is determined by the spread of range of judges.
rating in the original eleven point scale, given in term of \( Q \) (Quartile Deviation). If an item's \( Q \) is high, it is eliminated. For items that are retained, each is given its median scale value, between one and eleven as established by the panel.

The list of statements, twenty or twenty two is then given to the subjects, who are asked to check the statements with which they are in agreement. The median value of the statements that they check establishes their score, or quantifies their opinion. The person who has the large score is more favourable attitude inclined towards the object than the person with a lower scale.

2.4.2 Likert's Method of Summated Ratings

The Likert type scale presents a number of positive and negative statements regarding the attitude object. In responding to the item on this scale, the subjects indicate whether they strongly agree, agree, undecided, disagree or strongly disagree with each statement. The numerical value assigned to each response depends on the degree of agreement or disagreement with individual statement. The score of a person is determined by means of a summing of the values assigned to individual responses. For example, one may score a Likert type scale by assigning a value of four points to each response indicating strong agreement with favourable statements, a value of three for agreement with
these statements, two for being undecided, one for disagreement and zero for strong disagreement. For unfavourable statements one reverses the scoring procedure, since disagreement with an unfavourable statement is assumed to be psychologically equivalent to agreement with a favourable statement.

To construct a Likert Type Scale, the following steps are usually taken.

1) Collect a large number of favourable and unfavourable statements regarding attitude object.

2) Select approximately equal number of favourable and unfavourable statements from these.

3) Administer this items to a number of individuals, asking them to indicate their opinions regarding each statement by determining whether they strongly agree, agree, undecided, disagree or strongly disagree with each statement.

4) Compute the score of each individual using the scoring procedure.

5) Carry out the item analysis to select those items that yield the best discrimination. Through item analysis one finds the correlation between the subjects total scores and their responses to each item.
The Likert Scale uses items worded for or against the position, with five points rating response indicating the approval or disapproval of the statement. The check or ticks on the five point rating responses are weighted simply 0 to 4. Items are summated over the total number of items and summative score obtained. This procedure makes the Likert method very much like an ordinary test.

Eysenck and Crown (1949) have proposed a combination of the two methods, Thurston's and Likert's by giving the statements, the Thurston Scale value and response, the Likert weight. Both Thurston and Likert scales are specific as to the issue or object the attitude towards which is measured.

2.5 NORMS

An individual's performance in any psychological and educational test is recorded in terms of the raw scores. Raw scores are expressed in terms of different units, such as the number of trials taken within a specified period to reach a criterion; the number of correct responses given by the examinees; the number of wrong responses given.

total time taken in assembling the objects; and like that. 
All these raw scores convey no meaning in themselves.

The raw score as it is, can not be interpreted, 
though it is a fundamental piece of information, the raw score does not give any idea about an individual; the individual score must be looked in relation to his group. The test users are fundamentally interested in knowing how far an individual or group of individual stands against the criteria. The fundamental criterion is generally the average performance of the entire group; the individual who takes the test is interested in knowing his relative position in one's group. Thus, the norm is relative measurement. This is an important and most essential point in the standardization of the scale. In the absence of the norms no individual subject would get an idea about one's own performance on the scale. The term 'norms' may be defined as the average performance of the average group of individual.

Anastasi\(^9\) has defined norms as, "As its name implies a norm is normal or average performance."

Freeman\(^10\) defined norm as : "A norm is the average

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or typical score (mean or median) on a particular test made by a specified population."

The norms are established by giving the scale to a large and representative sample.

There are various types of norms such as: (1) Age norms, (2) Grade norms, (3) Sex norms, (4) Area norms (5) Percentile norms, (6) Quotient norms and (7) Standard scores. Age and Quotient norms are generally established for the scale to be used in elementary schools..

Green\(^{11}\) has rightly suggested, "The norms are also conditioned somewhat by the nature of the test itself. Tests are designed for use in elementary schools, grades are usually accomplished by age norms and grade norms and sometimes percentile norms based on grade placements. Tests intended for use in the secondary school are more frequently provided with percentile grade norms only. Age norms do not seem to be particularly useful at high school and college level, since so many factors other than age operate to effect achievement."

2.6 RELIABILITY

The main purpose of the measurement is to arrive at some standard and precise judgement about an individual. The judgement would be of some value, if it is based on dependable scores earned on dependable scale. The dependable scale means a reliable scale. The term reliability denotes trust worthiness of consistency.

Reliability is one of the important characteristics of a scale. In its simplest sense, reliability refers to the precision or accuracy of the measurement or score. A well made scientific instrument should yield accurate result both at present as well as over time. In other words, such an instrument should give consistent results. Reliability refers to the consistency of scores or measurement.

The reliability may be defined as the consistency of scores obtained from one set of measures to another. According to Anastasi reliability refers to, "the consistency of scores obtained by the same individuals when reexamined with test on different occasion, or with different sets of equivalent items, or under other variable examining conditions."

Ebel\textsuperscript{13} has given an operational definition of scale reliability as follows:

"The reliability coefficient for a set of scores from a group of examinees is the coefficient of correlation between that set of scores and another set of scores on an equivalent test obtained independently from the members of the same group."

This definition implies that reliability is not a property of a scale by itself but rather of a scale when applied to a particular group of respondents. The more appropriate the scale is to the level of abilities in the group, the higher is reliability of the score it yields.

This operational definition specifies that high correlation coefficient is that it provides a relative, rather than absolute measure of agreement between the pairs of scores obtained from the same persons. If the differences between scores for the same persons are relatively small to the difference between scores for different persons the scale tends to show a high reliability. But if the differences between scores for the same person are relatively large to the differences between persons, the scores will show low reliability.

The operational definition calls for two independent

\textsuperscript{13}R.L. Ebel, Measuring Educational Achievement, (New Delhi: Prentice Hall of India Pvt. Ltd., 1966), P. 311
measures obtained from equivalent test of the same trait for each member of the group. The above discussion reflects only one aspect of reliability namely adequacy of statement sampling. Another aspect of reliability is concerned with temporal stability i.e. the extent to which the original scores could be reproduced on different occasions.

Rammers and Gage\textsuperscript{14} have defined reliability as, "The consistency with which a test yields the same results in measuring whatever it does measure."

The definition indicates that there should be stability of the scores for the same individual, if the scale is given repeatedly. In other words the reliable test gives approximately the same result on two different occasions. This does not mean that there would not be any difference on two successive scores of the same individual obtained at two different occasions. There would be slight fluctuations. These fluctuations would not affect the reliability of a scale.

This aspect of reliability indicates that the scale should be stable with respect to those factors which operate during the interval time the test and retest to the extent that the two sets of scores are correlated; to

that extent the test is reliable. If this correlation is low or insignificant it means that the items are affected by the factors operating in the time interval. However, full proof reliability is still a question since the test is to deal with human being having variety of moods at different time interval. This does not mean that one can be flexible with the 'Reliability' as aspect of the test.

Robert Lado\textsuperscript{15} points out: "If the scores of the students are stable, the test is reliable, if the scores tend to fluctuate for no apparent reason the test is unreliable."

In short a scale must show sufficient evidences of it reliability. A scale without the statements of its reliability would be of a little value.

Anastasi\textsuperscript{16} has rightly said: "Despite optimum testing conditions, however, no test is a perfectly reliable instrument. Hence, every test should be accomplished by a statement of its reliability.


\textsuperscript{16} Anne Anastasi, Op. cit. P. 77
2.7 METHODS OF ESTIMATING RELIABILITY

The reliability is purely a statistical concept. The evaluation of the reliability of a scale requires determination of the consistency of repeated measurement of the same individual or group of individuals. In practice, all procedures of estimating reliability of a scale in psychology and education are based upon getting smaller number of measurements, typically only two, for each individual in a representative group. The stability of the results is achieved by increasing the number of individuals rather than the number of measurement of each. These measurements provide sets of scores, usually two for each individual for analysis. The usual analysis consists of computation of the coefficient of correlation between the two sets of scores, giving an estimate or reliability. This coefficient of correlation is generally expressed as the reliability coefficient of the scale.

A number of different methods are used to derive the reliability coefficient. There are three most common methods of estimating the reliability coefficient of scale scores. These methods are: (i) Equivalent forms method, (ii) Test retest method, and (iii) Split-Half Method.

2.7.1 Equivalent Forms Method

This procedure is very simple. From the very
beginning the investigator has to prepare two equal forms of the scale. These two forms must be very close in similarity. They should be close in matter of content, trait to be measured and processes required for responding the statements and in number of statements. The statements must have equal discriminative power, internal consistency and undimensional ability. The examinee takes one form of scale and then the other form soon after that. In order to control some error variance or practice effect the turns of the form should be rotated. The agreement between the two is determined by means of a correlation coefficient. This method overcomes the limitations of effect to time interval between two successive administrations of the evaluation device. This method is rarely used. Since it is very difficult to have two parallel forms of the same scale. Construction of two equivalent forms needs a lot of time. Therefore this method of estimating reliability is rarely used.

This method is known as parallel forms method or alternate form method or comparable forms method.

2.7.2 Test-Retest Method

This method of establishing the reliability of the scale is indeed very simple and easy. In this method the scale is to be administered to the group of individuals
representative of the sample on two successive occasions. The interval of time between the administration of the scale on two successive occasions must be short not to allow any great changes in the subjects. Yet long enough, so that they could not respond to the scale by memory on the second administration. A pair of scores is obtained for each respondent. The set of scores are then correlated to find out the reliability coefficient of the scale.

Though simple, this method has certain limitations too. This method is a time consuming method of estimating the reliability coefficient. This method assumes that the examinee's physical and psychological set up remain unchanged in both testing situations. But in reality this is not so. In fact, the examinee's health, emotional condition, motivational condition and his mental set up do not remain perfectly uniform. Not only this, the examiner's physical and mental make up also change. Besides, some uncontrolled environmental changes may take place during the second administration of the scale. All these factors are likely to make the total score of the examinees different from the first administration. The reliability coefficient obtained by this method is high, because memory plays a large part in answering the scale at the second time. Besides the memory effects, practice and confidence gained by familiarity with the scale also affect the scores on second administration.
When the examinee is once acquainted with the scale and the mode of answer, he is likely to develop a skill which may help him in the second administration. He is also likely to memorise many answers given in the first administration, if the time between two administrations is too short. All the acquired skill, knowledge and memory of first time are likely to help examinees in answering them in more or less in similar way the second time thus helping them in retaining their same relative position. If the time between two administrations is too long, same significant changes taking place during the time interval would produce low correlation. Thus, the time interval between two administrations should be neither too long nor too short. Despite all these limitations, this method is the most appropriate method of estimating reliability, so this method is mostly used.

2.7.3 Split-Half Method

Internal consistency reliability indicates the homogeneity of the scale. The most common method of estimating internal consistency reliability is the split-half method. The scale is divided into two equal or nearly equal halves in this method. The common way of splitting the scale is the odd-even method. In this method all odd numbered items (like 1, 3, 5, 7, 9 etc) constitute one part
of the scale and all even numbered items (like 2, 4, 6, 8, 10, etc.) constitute another part of the scale. Thus the entire scale would be split-into two reasonable equivalent halves. Each examinee, thus, receives two scores; one score from the all odd-numbered items and the other score from the all even numbered items. In this way from single administration of the single form of the scale two sets of scores are obtained. Then the reliability coefficient is computed.

The advantage of the split half method is that all data necessary for the computation of the reliability coefficient are obtained in the single administration of the same scale is automatically eliminated. Therefore, a quick estimate of the reliability is made.

A scale can be split into halves through different methods and it has been found that each method yields a different coefficient of reliability. Undoubtedly, this is a weakness of the split half method of estimating the reliability coefficient of a scale.

2.8 VALIDITY

Validity is another important characteristic of the scale. The term validity means truth or fidelity. Thus validity refers to the degree to which a scale measures what it claims to measure. Every scale is expected to
prove its worth. If the scale does not fulfil its worth, it is not worthy of anything. The term validity and purpose are very closely associated with each other. A scale which fulfills the purpose for which it is designed is called a valid scale. This led to say that the Attitude scale should measure the attitude of the subjects towards a thing and nothing else.

Garrett\(^{17}\) has rightly put it as: "The validity of the test or of any measuring instrument, depends upon the fidelity with which it measures what it purports to measure."

Freeman\(^{18}\) defined validity index as: "An index of validity shows that degree to which a test measures what it purports to measure, when compared with an accepted criteria."

Defining validity Anastasi\(^{19}\) has said, "The validity of a test concerns what the test measures and how well it does so."


\(^{18}\) F.S. Freeman, Op.cit., P. 88

\(^{19}\) Anne Anastasi, Op. cit., P. 99
Lindquist has defined validity of a test "as the accuracy with which it measures that which is intended to measure or as the degree of to which it approaches infallibility in measuring what is purports to measure."

The above definitions point to the fact that for determining the validity of a scale, the scale must be compared with some ideal independent measures or criteria. The correlation coefficient computed between the scale and the ideal measures or criteria is known as the validity coefficient.

The scale for measuring mental abilities, aptitude, attitude etc., must justify their purpose. In the process of scale construction and standardization, proof of justification of purpose is known as the scale validation. Consequently, validation of a scale score is the most important and significant step in the process of standardization of any scale. Most of the users before selecting the scale for the use look carefully into the value of validity. Therefore, the construction of the scale should make clear the concept of the validity.

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2.9 METHODS OF DETERMINING VALIDITY

Procedure for determining validity of the scale are primarily concerned with the relationship between performance on the scale and other independently observable facts about the behaviour characteristics under construction. There are many techniques that are employed for investigating these relationships.

Anastasi\(^{21}\) has presented as follows: The APA Technical recommendation has classified these procedures under four categories, designated as content, predictive, concurrent and construct validity. Out of these four categories of validity two namely content and construct or concept validity are described under the heading of rational validity by many authors. Similarly concurrent and predictive validity are described under the heading of empirical or statistical validity.

2.9.1 Construct or Concept Validity

In case of determining the construct validity the first task is to define the measure. Thorndike and Hagen\(^{22}\) have rightly, explained what the phrase concept or construct really mean. "Again we are thrown back on

rational analysis but this time we are trying to analyse concept and see what is implied by it, rather than to make a catalogue of content."

Construct validation is a more complex and difficult process than content validation and criterion validation. Hence, the investigator decided to compute construct validity only when he is fully satisfied that neither any valid and reliable criterion is available to him nor any universe of content entirely satisfactory and adequate to define the quality of the scale. In other words, construct validity is computed only when the scope for investigating criterion validity or content validity is bleak.

Construct validation is also a difficult process because it contains several problems like systematic examination concerning the definition of the construct, unsuitability and inappropriateness of the measures of the construct, lack of high correlations among measures etc. Thus the construct validity is rarely computed.

2.9.2 Congruent Validity

This type of validity is essentially estimated by the means of a statistical technique. For this the set of scores on the present scale is correlated with the set of criteria of a similar measure. It means, it is correlated with some available well known powerful scale of
the similar nature. The correlation of the new scale with the existing scale would show to what extent the two scales measure the same characteristics. If the correlation coefficient is very high between these two sets, it is inferred that the new scale is valid, since it measures what the criterion scale is supposed to measure. The type of evidence just proposed is somewhat circular; for this, the condition is that the criterion test must be fully valid, otherwise the correlation between two scales would not be much dependable and this type of validity would be misleading.

2.9.3 Concurrent Validity

The evidence of the validity be obtained from the relationship with other currently obtainable information about an individual. Anastasi\textsuperscript{23} has defined the concurrent validity as: "The relation between test scores and indices of criterion status obtained at approximately the same time is known as concurrent validity."

For determining the concurrent validity the scale is correlated with a criterion which is available at the present time. The resulting coefficient of correlation will be an indicator of concurrent validity.

2.9.4 **Factorial Validity**

The factorial validity of a scale is the correlation between the scale and the factor, common to a group of scales or other measures of behaviour. Such validity is simply the factor loading of a particular factor in the scale in question. Such factor loading is also equivalent to the correlation of the scale with factor validity of a given scale is defined by its factor loading and are given by correlation of the scale with each factor.

According to Ebel\(^{24}\)

"Factorial validity of a test is the correlation between that test and the factor common to a group of tests or other measures of behaviours, such as validity based on factor analysis."

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