

## CHAPTER – IV

### CONSTRUCTION AND STANDARDIZATION OF THE TOOL

#### 4.0 INTRODUCTION

Review of related literature in value education helped the investigator for finalizing the methodology to be adopted for the present study; moreover, to construct and standardize a research tool for the present study. A research tool plays a major role in any research, as it is the sole factor to determine sound data and in arriving at perfect conclusions about the study and which helps in providing suitable measures to the problem concerned.

Gay and Peter (2000), “There are three main ways to collect data for research studies: administer an existing instrument, construct one’s own instrument, and record naturally occurring events (observation) or collect already existing data. The time and skill it takes to select an appropriate instrument are invariably less than the time and skill it takes to develop an instrument that measures the same thing.”

The investigator found that the existing research tools do not suit the purpose of the present study; will not provide data for testing the hypotheses. Hence the tool to collect the data - *an Attitude Scale* was constructed and standardized by the investigator, to study the attitude of the in-service teachers towards the traditionally accepted universal human values-Truth, Beauty, Goodness.

The method followed was, *the method of summated ratings* commonly referred to as *Likert type scale*.

Rensis Likert developed the original scale of this type in 1932. He reported very satisfactory reliability of data for the scales developed with this procedure.

The present chapter, describes the procedures followed to construct and standardise the tool for the study – *Attitude Scale of the In-service Teachers towards the Traditionally Accepted Universal Human Values-Truth, Beauty, Goodness*.

#### **4.1 MEASUREMENT OF ATTITUDE**

The possibility of measuring Attitude was studied extensively by Thurstone (1928) and in his paper, *Attitudes can be measured*, he mentions, “The purpose of the paper was to discuss the problems of measuring attitudes and opinions and to offer solution for it.”

Thurstone’s methodological innovations undisputedly gave impetus and direction to research in attitude change for the concomitant period. Thurstone (1928), “It will be conceded at the outset, that an attitude is a complex affair which cannot be wholly described by a single numerical index.” The concept of attitude used by Thurstone here denoted the sum total of a man's inclination and feelings, prejudice or bias, preconceived notions, ideas, fears, threats and convictions about any special topic. According to him *opinion* is a verbal expression of attitude and a symbol of attitude and opinions can be used as the means for measuring attitudes.

Then a question arose, man may be a liar and in this situation, a frank expression of his attitude may not be well received and this led to a suggestion that man’s action is a safer index of his attitude than what he says. But his actions may also be distortions of his attitude. However, he stressed that neither opinions nor

overt acts constitute in any sense an infallible guide to the subjective inclinations and preferences that constitute one's attitude. Analogous to the physical measurement of physical objects, some error of measurement abounds and hence one or more indices, which are internally consistent, have to be found. He continued, "We shall measure the subject's attitude as expressed by acceptance or rejection of opinion, but we shall not thereby imply that he will necessarily act in accordance with the opinions that he has endorsed." To make clear this limitation, he explained the measurement of attitudes expressed by a man's opinions does not necessarily mean the prediction of what he will do. If his expressed opinion and actions are inconsistent, that does not concern us now because we are not setting out to predict overt conduct. Also, he continued, "We take for granted that people's attitudes are subject to change. His attitudes may change of course, one day to the next and it is our task to measure such changes whether they are due to unknown causes or to the presence of some known persuasive factor such as reading of discourse on the issue in question. However, such fluctuations may also be attributed in part to error in measurements. In order to isolate the errors of the measurement instrument from the actual fluctuations in attitude we must calculate standard error of measurement of the scale itself and this can be accomplished by methods already well known in mental measurement. We shall assume that the attitude scales are used only in those situations in which one may reasonably expect people to tell the truth about their convictions or opinions and experience minimum pressure in the attitude to be measured."

Thurstone sums up saying that all that we can do with an attitude scale is to measure the attitude actually expressed with full realization that the subject may be consciously hiding his true attitude or that the social pressure of the situation has made him really believe what he expresses.

This is a matter of interpretation. It is something probably worthwhile to measure an attitude expressed by opinions. It is another problem to interpret in each case the extent to which the subjects have expressed what they really believe. All that we can do is to minimize as far as possible the conditions that prevent our subjects from telling the truth, or else to adjust our interpretations accordingly.

Thurstone's contribution of the paper *Attitudes can be measured* put an end to the much of the unproductive debate of that period regarding measurement of attitudes. The method of the equal appearing interval was originally devised by Thurstone and Chave (1929) and has been modified subsequently in the light of research finding. The scale also, known as *Thurstone* type scale or *Differential* scale. It contains a number of opinion statements, reflecting various positions on a hypothesized simple dimensional continuum. Inherent in the scale is the conviction that attitude possesses an affective quality and evaluative characteristics (directional and extremity). Each statement has a scale value and attitudinal affect is being defined as equal to the average evaluative scale value of all the statements the individual applied to the attitude object.

The major steps involved in the technique are as follows:

- i) Collecting and editing statements.
- ii) The sorting procedure: the statements are given to the experts or judged for classification. Thurstone and Chave used 300 judges for classifying 130 statements.
- iii) Selection of statements for the final scale and
- iv) Lastly reliability and validity calculated.

## **4.2 ATTITUDE SCALES**

Various scaling techniques have led to the development of different types of Attitude scales, which provide quick and convenient measure of attitudes.

According to Freeman (1965), “There are three assumptions upon which attitude scales are based:

1. The scale should deal with a controversial question.
2. An individual’s feelings and insights in regard to the questions will determine his responses to various statements that are made pro and con
3. The statements can be scaled regarding the degree to which they favor, or are opposed to, the question under consideration.”

The five most often used scales are:

1. Differential Scales (Thurstone–type scale or the Method of Equal Appearing Intervals), which uses consensus scale approach i.e. the selection of items is made by a panel of judges who evaluate the items in terms of whether they are relevant to the topic and unambiguous in implication.
2. Summated scales (Likert-type scales), which are developed by utilizing item analysis approach wherein a particular item is evaluated on the basis of how well it discriminates between those persons whose total score is high and those whose total score is

low. The items or statements that best meet this sort of discrimination test are included in the final instrument.

3. Arbitrary Scales follow arbitrary approach. They are developed on ad hoc basis. They are designed largely through the researchers' own subjective selection of items. The researcher first collects a few statements or items, which he believes are unambiguous and appropriate to a given topic. Some of these are selected for inclusion in measuring instrument and then people are asked to check in a list, the statements with which they agree.

4. Cumulative Scales (Guttman Scalogram analysis), like other scales, consists of series of statements to which a respondent expresses his agreement or disagreement. The special feature of this type of scale is that the statements form a cumulative series. This means that the statements are related to one another in such a way that an individual who replies favorably to item number 3, also replies favorably to item number 2 and 1. And the individual, who replies favorably to item number 6, also replies favorably to item number 5,4,3,2,1. That being so an individual whose attitude is at certain point in a cumulative scale will answer favorably all the items on one side of this point and answer unfavorably all the items on the other side of this point. The individual's score is worked out by counting the number of points concerning the number of statements he answers favorably.

5. Semantic Differential Scales developed by Osgood, SUCI, Tanenbaum (1957) is similar to the Likert method in that the respondent indicates an attitude or opinion between two extreme choices, this method usually provides the individual with a seven-point scale with two adjectives at either end of the scale such as

good-bad, fair-unfair, clean-dirty. The respondent is asked to rate a group, individual or object on each of these bipolar scales.

The scales mentioned above, have their own merits and limitations too. Arbitrary scales can be developed easily, quickly and with least expenses. Such scales are widely used in practice. But the most important limitation is that we do not have objective evidence that such scales measure the concept for which they have been developed and we rely on researchers' insight and competence. Hence the investigator did not select this type of scale for the present study.

Semantic Differential Scale is not widely used because of the computation complications involved in it. Many of its methods are quite laborious in terms of the collection of data and subsequent analyses.

Guttman's Scalogram Method is not frequently used method for the simple reason that its development procedure is tedious and complex. Such scales hardly constitute a reliable basis for assessing attitudes of persons towards complex objects for predicting the behavioral responses of individuals towards such objects. Conceptually, this analysis is a bit more difficult in comparison to other scaling method.

Thurstone's scales (the method of equal appearing intervals) and Likert's scales (the method of summated ratings) were the most extensively used scales in attitude or opinion research. Out of the two methods mentioned above, the investigator has selected Likert method of summated ratings to construct the attitude scale in the present study i.e. to measure the attitude of the in-service teachers towards the traditionally accepted universal human values—Truth, Beauty, Goodness.

Few points to mention in this regard are as follows

1. Likert method appears to yield similar results to that devised by the method of equal-appearing intervals.
2. The coefficient of correlation between Thurstone scale and Likert scale was reported as high as +0.92 in a study by Edwards and Kenny (1946).
3. It has been claimed by Likert (1932) that the summated ratings is simpler and easier to apply in the development of an attitude scale than is the method of equal appearing intervals. This claim has been supported by, others who have used the method of summated ratings.

They are mentioned as below

Hall (1934) states, that he used the method of summated ratings in his survey of attitudes of employed and unemployed men because of its relative simplicity.

Rundquist and Sletto (1936) used the method of summated ratings in developing the attitude scales, contained in the Minnesota Survey of Opinions and they also express that, “The method of summated ratings is less laborious than that developed by Thurstone.”

Edward and Kenny (1946) in their comparative study of the method of summated ratings and the method of equal appearing intervals, estimate that the time required to construct an equal appearing interval scale is approximately twice than that required by the method of summated ratings.

Oppenheim (1966) states, “The construction of a Thurstone scale always means a lot of work, and is often difficult to obtain an adequate group of judges. He (Likert) eliminated the need for

judges by getting subjects, in a trial sample to place themselves on an attitude continuum for each statement—running from *strongly agree*, *agree*, *uncertain*, *disagree*, to *strongly disagree*, and these five positions were given simple weights of 5, 4, 3, 2, 1 for scoring purposes.”

4. Hall (1934) indicates, “Likert type scales with even fewer statements will give high reliability coefficients; for the scale of ten statements measuring attitude towards religion ranged from 0.91 to 0.93; another scale of seven statements measuring attitude towards employers the coefficients ranged from 0.77 to 0.87; and the morale scale of five statements gave reliability coefficients from 0.69 to 0.84.” All of these coefficients compare favorably with those obtained from scales constructed by the method of equal-appearing intervals. According to the evidence at hand, there is no reason to doubt that scales constructed by the method of summated ratings will yield reliability coefficients as high as or higher than those obtained with scales constructed by the methods of equal-appearing intervals.

5. Oppenheim (1966), “Reliability of Likert scales tends to be good and partly because of the greater range of answers permitted to respondents, is often higher than that of corresponding Thurstone scales, a reliability coefficient of 0.85 is often achieved. The scale makes no pretence at equal-appearing intervals but by using the internal-consistency method by item selection it approaches unidimensionality in many cases. The number of items in a Likert scale is arbitrary, but is sometimes very small.”

Apart from the merits, there are few criticisms too leveled against Likert type scales. Oppenheim (1966) mentions, “The most

serious criticisms leveled against Likert scale is its lack of reproducibility (in the technical sense). The same total may be obtained in many different ways. This being so, it has been argued that such a score has a little meaning or else that two or more identical scores may have two totally different meanings. Often for this reason, the pattern of responses becomes more interesting than the total score.”

Another criticism according to Oppenheim is that the scale offers no metric or interval measures and it lacks a neutral point, so that one does not know where scores in the middle ranges change from mildly positive to mildly negative. As against this, he points what Croanbach (1960) has pointed out that percentile norms or standard deviation norms can be calculated if a sample of sufficient size is available. Oppenheim ascertains that Likert scale splits up people within the same group. Moreover, with respect to neutral point on the scale, he agrees that this cannot be the mid-point between the two extreme scale scores; his opinion is that the scores in the middle region may be due to unenthusiastic responses, lack of knowledge, or may be due to lack of attitude in the respondents, which leads to many uncertain responses. He adds that it may also be due to the presence of both strongly positive and strongly negative responses at the extremities, which may more or less balance each other. All these points leading to the suggestion that the scale is not unidimensional. He ascertains that all these different possibilities suggest that the neutral point would not only be difficult to locate but also more difficult to interpret. In spite of these limitations, the advantages of Likert scale accounts for its popularity.

Due to the advantages of Likert scale, mentioned above the investigator selected Likert scale to construct and standardize a tool for the present study. Likert's primary concern was with unidimensionality - making sure that all the items would measure the same thing. In the present study, the attribute, attitude towards the traditionally accepted universal human values-Truth, Beauty, Goodness was accepted being composed of various components. However, a deviation was made. Unlike the Likert scale, which requires that all the statements pertain only to a single reference point, which is the psychological object, the scale in the present study described the reference point as being constituted of certain components-components of values. Possessing any one of the components to a very great extent would not lead to placing the individual in the right extremity of the hypothetical continuum of the attitude towards values. Since it is logically held to be a totality of different components which work in a total contributory manner, an individual in order to be highly value-based human being needs to have in his pattern of behavior, all the components to a certain degree. The component-wise breaking up was a matter of convenience to assure representation of the totality of behaviors comprising attitude towards traditionally accepted universal values, which when it operates in an individual is to be issued as a single entity.

Rama (1962) to study the attitude of the Indian women towards the traditional values constructed a Traditional Value Scale towards the spiritual, moral, economic, social and familial values.

Bhatt and Advani (1965) constructed Likert type scales to measure attitudes consisting of eight sections related to adolescents' life; adolescents' behavior towards teachers, towards

parents, moral values, social values, civic values, religion, boy-girl relationship. Above two studies support using Likert scale while the reference point was being constituting certain components.

### **4.3 CONSTRUCTION AND STANDARDISATION OF THE ATTITUDE SCALE**

In the present study, the investigator constructed and standardised an attitude scale by the method of summated ratings given by Likert (1932) to measure the attitude of the in-service teachers towards the traditionally accepted universal human values - Truth, Beauty, Goodness. The description of the detailed process of construction and standardisation is presented below. The first step in the construction of an attitude scale is to compose an item pool. The items that constitute the attitude scale are called statements. A statement is defined as anything that is said about the psychological object under consideration and the class of all the possible statements is called a *universe of content* or a *universe*.

#### **4.3.1 STEP I Collecting and Editing of Statements**

The first step in the construction is to obtain statements that represent the attitude of the in-service teachers towards the traditionally accepted universal human values-Truth, Beauty, Goodness. The statements must express an opinion or feeling towards the traditionally accepted universal human values-Truth, Beauty, Goodness and also must express an attitude that is either clearly favourable or clearly unfavourable. It is mentioned before that the scale under consideration is described to have the reference point as being constituted as components of the

traditionally accepted universal human values - Truth, Beauty, Goodness.

#### **4.3.1.1 Identification of the Components of the Traditionally Accepted Universal Human Values - Truth, Beauty, Goodness**

The components of Truth, Beauty, Goodness were identified with their behaviors seeking the opinion of eminent experts in the field of education. The behaviors of each component specified. Moreover, the behaviors of each component were expressed in relation to duties and obligations of the in-service teachers with respect to their work schedule in school.

##### **4.3.1.1.1 Value–Truth**

*Truth* is defined as the relevance of statements about reality-to-reality; reality meaning permanent and ultimate things. It means absence of deceit, absence of fraud in speech, mind and body. *Truth*, which is unison of thoughts, words and deeds, can be envisaged as the highest value, which should be cherished by a human being. *A man of Truth* is an invaluable asset to the society. When the power of the *Truth* increases within an individual, his mind and intellect are purified and his willpower gets strengthened, leading to increase in righteousness of his actions. And through his power of discrimination, chooses the good, right and just and suppresses or quits the wrong conduct and performs the good action courageously. Hence, *Truth* in action is righteous conduct. Action takes place in the physical domain. Behind each act there is a thought, which derives its support from the human willpower as opposed to human desire. *Truth* bridges between *reality* and *desirability* in the work schedule of teachers, eliminating the self-interest and greed of an

individual teacher, widening the scope of devotion and dedication to the welfare of the students, the school and the society. It welcomes objectivity in all affairs of the quest. Hence, the value-*Truth*, which is a statement of what constitutes *reality*, finds its components as: *Impartiality, Responsibility, Integrity, Faith and Courage*.

The components and their behaviors are given below:

***Impartiality***

- The quality or character of teacher being impartial or unbiased to the students/parents/staff.
- The quality of treating of or representing facts or reality without reference to feelings or opinions, without prejudice to students/parents/staff.
- The quality of rendering what is due or merited offering justice maximum to students.

***Responsibility***

- The state of being accountable for one's individual actions
- The state of being accountable for communities' actions towards oneself.
- The state of being accountable for one's actions, towards students and environment.

***Integrity***

- The quality of being consistently honest.
- The quality of being morally right and just.

### ***Faith***

- The quality of having trust in oneself.
- The quality of having trust in one's students.

### ***Courage***

- The capacity to meet difficulty with firmness.
- The ability to overcome fear.

#### **4.3.1.1.2 Value–Beauty**

Man reacts to everything he sees, hears or senses and he makes aesthetic judgments according to how he appreciates. His appreciation of *Beauty* is known as aesthetic value. Some philosophers delimit aesthetic value of *Beauty* only to artistic works. John Dewey, the pragmatist opines, “A child can develop a sense of appreciation of geography and shop work just like music and painting. He can enjoy beauty in mathematics as well as in poetry. Hence one cannot delimit aesthetic sense only to the fine arts. One should bear in mind that aesthetic experiences are vitally composed of feelings.” The possession of value-*Beauty* sensitizes a man to himself, to others and to his environment on aesthetic ground. As an educator, the teacher needs this sensitivity to maximum in himself/herself, to others (especially to students) to bring effective growth in them and to bring out the best in them. According to Dictionary, *Beauty* is any of those attributes of form, sound, color, execution of character behavior etc. which give pleasure and gratification to the senses or to the mind. Hence, the value-*Beauty* finds its components in *sensitivity*, so the components selected were: *Punctuality, Regularity, Cleanliness, Politeness and Love*.

The components and their behaviors are given below:

***Punctuality-(sensitivity towards time)***

- The quality of being habitually exact to the appointed time.

***Regularity-(sensitivity towards a pattern/form)***

- The quality of conforming to fixed/proper procedures, principles.
- The quality of exhibiting orderly or systematic work.

***Cleanliness-(sensitivity to impurities)***

- The quality of being habitually free from dirt, impurities, corruption.
- The quality that prods an individual to pursue principles of inner purity of soul, for these principles purify him of all that taint his mind, body and soul.

***Politeness-(sensitivity to controlled and pleasing behavior)***

- The quality of exhibiting in manner/speech a considerable regard for students/parents/ staff.
- The quality of behavior characterized by refinement, elegance and courtesy.
- The quality of behavior characterized by grace of style marked by appropriateness and simplicity.

***Love-(sensitivity to strong affection and devotion)***

- The strong tendency of affection towards one's students, country, environment, one's own profession.
- The quality by which one acquires devotion, friendship, humanism.
- The quality by which one can overcome jealousy, hatred, anger, animosity, bitterness, revenge.

#### **4.3.1.1.3 Value–Goodness**

The value-*Goodness* can be explained by attempting a definition of good-*The good is that at which all things aim*. It is the transcendental property of being (Fr. Morris, H. 1965) the ends, are either activities or results beyond the activities. Knowledge of the supreme good is of great importance as regulating the aim or object of human life. Dictionary meaning of *Goodness* is the state or quality of being good: virtuous, worthy, benevolent, well-behaved, desirable, beneficial, skillful and excellent. The value-*Goodness* connotes *magnanimity*: the greatness of mind and soul which goes out of its way to help others through large heartedness and nobility of character, the quality of mind which elevates man above all that is mean and petty. Magnanimity ensures that, consideration shown to others is given genuinely with warmth and true feelings for their needs and not for personal satisfaction. Hence, the value-*Goodness* finds its components in *magnanimity*, so the components selected were: *Patience, Kindness, Empathy, Inoffensiveness, and Forgiveness*.

The components and their behaviors are given below:

##### ***Patience***

- The quality of forbearing towards faults of others (students).
- The quality of enduring without complaints.
- The quality of being tolerant.
- Refraining from taking action voluntarily, acting patiently.

##### ***Kindness***

- The quality of being friendly and helpful to students.
- The quality of not causing violence by one's thoughts, words, or deeds to human beings (students), nature or animals.
- Refraining from unjust infliction of punishment as for evil done.

- Refraining from repaying evil by evil.

***Empathy***

- The quality of character or one’s efficiency to identifying oneself with others (students) and resulting capacity to feel or experience sensation, emotions, thoughts similar to those being experienced by others (students, teachers, parents).

***Inoffensiveness***

- The quality of being harmless or causing nothing displeasing not aggressive, not injuring the feeling of others (students, teachers, parents).

***Forgiveness***

- One’s quality to grant pardon for something (students’ faults).
- Cease to blame or feel resentment against, offer reason/apology for an error.
- Plea/reason given to justice for an offence/ neglect /failure.

The components identified for the traditionally accepted universal human values–Truth, Beauty, Goodness presented in the following table.

**Table: 4.1  
Components identified for the Traditionally  
Accepted Universal Human Values-  
Truth, Beauty, Goodness**

<b>Values</b>	<b>Truth</b>	<b>Beauty</b>	<b>Goodness</b>
Components	Impartiality Responsibility Integrity Faith Courage	Punctuality Regularity Cleanliness Politeness Love	Patience Kindness Empathy Inoffensiveness Forgiveness

#### **4.3.1.2 Brief Description of the Fifteen Components Identified for the Traditionally Accepted Universal Human Values – Truth, Beauty, Goodness**

##### **1. *Impartiality***

Impartiality is the quality of the teacher not being partial or biased to the students, their parents and the staff in school; the quality of rendering what is due or merited, offering maximum justice; the quality of treating or representing, facts or reality, without reference to feelings or opinions, without prejudice. Impartiality is an important attribute of justice; the full development of a child in a school is dependent on the prevalence of justice and impartiality, with all its attributes. A teacher should give an impartial sympathetic treatment to all students without consideration of physical, intellectual, emotional, religious, social, racial, economic differences in them. An impartial teacher accepts the fact that differences are natural and extends all possible help to each student to utilize his/her capabilities fully for maximum development. A teacher can practice impartiality in school being absolutely fair in dealing with the students, their parents and the staff and not nursing prejudices of any kind.

##### **2. *Responsibility***

Responsibility and accountability are values, which cannot be separated; one leans heavily on the other; one complementing the other. While responsibility connotes the *liability* to be called to account when in charge or control of an undertaking; accountability connotes the *liability* to answer as one responsible. If responsibility is answerable for something; accountability is answerable to someone. Responsibility volunteers acceptance of a commitment on the conviction that the task is within its

competence. Responsibility studies the assignments for its difficulties and matches them with its own resources. Responsibility accepts a charge with all its difficulties and problems and takes the blame or credit for its success or failure. Fulfilment of civic duties, flow from one's sense of responsibility. Responsibility is in the sense of one being accountable for one's action and the outcome thereof has been a matter of considerable concern in education. A responsible teacher works untiringly, with selfless dedication to honour one's commitments towards one's profession, and seizes every opportunity to develop potential fully and works with colleagues in good team spirit. The functions and role of teachers entail an intellectually exhaustive duty that insists upon a conscientious exercise of their freedom and careful discharge of their responsibilities towards their students' welfare, students' parents, the school staff, the school management, the community and the society. They have a bounden duty that is all widespread, within the outlook of the school they work. The idealised roles and functions of teachers are strong decrees that prescribe the direction of their behaviour towards being responsible and accountable in their efforts to achieve the goals of education.

### ***3. Integrity***

Integrity is the quality of being consistently honest, morally right and just. Integrity that is uprightness of character is one of the essential values for character formation and personality development. It is the quality within the individual that urges him to be true to himself and to others. Integrity to self implies obedience to one's conscience, the monitor of one's own

thoughts, words, deeds, and harmony in thoughts, words, deeds, which gives directions to one's life. Integrity sees the self as it really is with all its limitations and potentialities. Teachers who display integrity are open, honest and consistent in behaviour and can be relied upon, pure in thought and action. They generate confidence in others through their professional and ethical behaviour. A teacher with integrity will set and maintain high professional standards, would only respond to his conscience and never be influenced by temptations and pressures from outside and will encourage his students to avoid any trace of dishonesty, falsehood in their action.

#### **4. Faith**

Faith is a feeling, conviction or belief that something is true or real, not contingent upon reason, justification; a trust or confidence in the intentions or abilities of a person, object or ideal; an obligation of loyalty or fidelity and observance of such an obligation. Faith is the basis of teacher-student relationship. When students reflect back and come to know that their teacher is faithful to them, they in turn develop faith towards their teacher and feel free to confide with the teacher. Thus, a strong teacher-student relationship develops. This results in students obeying and following the teacher whatever the teacher tells them; easily a teacher can inculcate values in them. A teacher can instill faith in the students in their own innate powers of attaining the highest level of perfection.

### ***5. Courage***

Courage, which is inherently dynamic, is the ability to face strains and setbacks of the rapidly changing environment with valour. All the life's challenges must be faced with courage. Also, it takes courage for an individual to fight for his principles and values unflinchingly. Fear, which is the antithesis of courage, cramps the spontaneity of the individuals. Fear, which is haunted with discouragement, overpowers weak willed individuals making them cringe before autocratic rulers/superiors for own selfish ends. Fear degrades those individuals rendering them weak, ineffective and reducing them to a tool in the hands of those who exploit their fear. Courage does not mean absence of fear but it is a quality to overcome fear bravely. Courage makes all efforts to standby truth. Courage is the only force that induces an individual to face disasters with calmness, tranquillity, poise, confident of achieving success. It urges an individual to face his/her frailties with optimism. A teacher needs both physical and moral courage. It takes physical courage to save students from any accident or attack. It takes courage to speak or act against the power of a rude and dishonest person. Whatever maybe the situation one does not give up one's high or noble principles in the face of coercion or temptations. Also, one needs moral courage to admit one's faults or mistakes. Criticisms analysed courageously directs personal growth. A teacher may have to face criticisms from students, their parents, colleagues, managements, administrator, society, but a courageous teacher will surmount all those criticisms and rash judgments through one's courage with calmness and composure; will stand up for his/her principles fearless of others' opinion. A courageous teacher uses every

opportunity to acquire the techniques for his/her growth and be true leader who takes up a challenge daringly and is led by hope of success, perseverance, self-confidence, willingness to take risks and optimistic outlook.

### **6. Punctuality**

Punctuality is sensitivity towards time. Punctuality manifests a realization, appreciation and sensitivity for the value of time and time commitments. An individual who practices punctuality habitually develops peace, calmness, tranquility, self-confidence. An individual who adheres to punctuality not only obtains achievement, satisfaction in life but also wins the respects of others in the society as duties discharged punctually help to mould the character of the individual. On the contrary unpunctuality dissipates vital timely opportunities that could have contributed to the growth of an individual. Also, it makes an individual tardy, dilatory, and unconcerned about the needs of others and develops in him/her anxiety, confusion, tension, frustration, and dissatisfaction. Punctuality reckons all appointments as commitments to be discharged dutifully in time. A teacher observes punctuality in school through observing the school academic schedules, completing time-bound schedules as finishing the study course in time well before the examinations, so that students will get time to revise, completing the evaluation process of examination papers of the students in time, keeping appointments and commitment made to students, management, colleagues and parents of the students and society; observing punctuality while undertaking social, cultural and sports programmes for the school; and in society being on time while

attending to jobs, public functions and duties, honoring time commitments with respect to any work under taken.

### **7. Regularity**

Regularity is sensitivity towards a pattern/form. Regularity is the quality of conforming to a fixed/proper procedures and principles the quality of being orderly or systematic in work demonstrating a consistent set of rules, showing order, evenness of operation or occurrence. Regularity disciplines an individual making him follow an established life style, brings into play the qualities of steadiness and consistency that regulate and systematize his life. Regularity is a habit, which contribute to the development of character - attending to the needs of personal health and hygiene regularly, which brightens the human personality. A regular lifestyle promotes efficiency of an individual. Regularity lays the foundation for effectiveness in any field and it is a disciplining process meeting deadlines through regular disciplined work. On the contrary, irregularity makes the life of an individual erratic and disordered. A teacher has to do multiple tasks in the classrooms so it is essential for a teacher especially those who work in large classrooms to keep priority and plan for the work to go smoothly. A teacher who has regularity, as a quality, will try to develop regularity in the students as it disciplines them making to follow an established life-style.

### **8. Cleanliness**

Cleanliness is sensitivity to impurities, the quality of being habitually free from dirt, impurities, corruption, guilt and defilement, the quality that provides an individual to pursue principles of inner purity of soul for these principles purify him of

all that taint his mind, body and soul. Cleanliness displays respect for the dignity of an individual, promoting him to inculcate in himself and to convince those with whom he comes in contact in day-to-day living. Those who adhere to cleanliness, lives a life that is healthy. It is the reflection of the inner purity of the soul and it habituates one to adopt a life style that is refreshing and pure. Bible, Psalms (Li 10) *Create in me a clean heart, O God, a prayer who wishes to live a life, pure, especially morally or religiously.* Cleanliness can be practiced through wearing clean clothes, keeping one's belongings in proper places, using clean and courteous language and avoiding use of foul language, abstaining from participation in immoral jokes and rude conversation, practicing purity in thoughts, words and deeds, maintaining ecology by lowering pollution, respecting national property by the correct use of national transport, roads, gardens, parks, monuments. A teacher who practices cleanliness as a great virtue will guide the students in the matter of reading material, advocating the reading of good literature while boycotting the purchase of demoralizing books, creating awareness in students that a sound mind in a sound body is the outcome of purity practiced in thought, word and deed.

### **9. Politeness**

Politeness is sensitivity to controlled and pleasing behavior. Politeness is the quality of character exhibiting in manner/speech, a considerable regard for others; the quality of behavior characterized by grace of style marked by appropriateness and simplicity, the quality of behavior characterized by refinement, elegance and courtesy. Politeness connotes refinement, elegance

of manner, and an act of civility shown in the behavior of others. Politeness is serene, calm, poised and maintains its decorum in the face of boorishness and rudeness and smoothens the working of interpersonal relationship. An individual who is impolite is a rude, boorish, rough and tramples arrogantly on the rights of man, being insensitive to his feelings, disrupting interpersonal relationships and harmony of a well-mannered, civilized community. Politeness adorns a teacher with charm, appeal, affability, friendly and approachable, through his/her soft-spoken, amicable, refined and considerate behavior to students, their parents, to staff, management, society. A polite teacher is being respected, accepted and loved by the students, who is well mannered and civilized becomes a role model for his/ her students, who refrain from being envious of the characteristics, qualities, talents and potentials of others and taking positive measures to develop oneself to the fullest. Teachers have for its motivating force benevolence that tinges all its actions with genuine respect for the rights and feelings of others.

#### **10. *Love***

Love is sensitivity to strong, affective and devotion; strong tendency of affection towards one's students, one's country, environment, and one's own profession and towards self. Love is the quality by which one acquires devotion, friendship, humanism; the quality by which one can overcome jealousy, hatred, anger, animosity, bitterness, revenge, which induces an individual to be worthy of receiving its bounty, which flourishes between groups who admire and respect each other and creates an environment where happy relationships exist. Love increases

spiritual energy of both giver and receiver. Without love or being loved no one can exist on earth. Love is the principle, which creates and sustains human relations with dignity and depth. True love is fearless and totally unselfish and does not ask anything in return. It kindles love in fellow beings. Hatred, results into destruction of the opponent, at the same time playing havoc with the health of the individual who hates, for hatred is self-destructive-a psychological self-sabotage. Love of self is expressed through one's taking care of one's health, education, hobbies, and profession. Being aware of one's potentials and limitations and accepting them for what they are, aspiring to fulfill personal potentials is a display of true love of self. Love is consciousness, which is simultaneously selfless and self-fulfilling. It is an eternal quality of soul, which brings joy; makes one free from worry and brings a natural experience of peace, is the drawing force of life of human beings and its humanistic outlook. Universal love is human value, which is of significance in relation to fellow human beings as well as society in general is the need of the hour; as still in the world there are riots and violence in the name of religion, communities, nations, and countries arising from time to time. Also under the broad title of universal love may be incorporated fellow feelings, consideration for others, cultivating goodwill for all service in particular of those who are suffering and abandoned and the impoverished humanity. Not only, universal love includes brotherhood of mankind but also, love and care of nature, environment-its flora and fauna, which are getting extinct; and the need of the hour is to save the environment and the planet earth itself. A teacher's love acts as a motivating force to students leading them to work hard and

achieve success. Also, a loving teacher can change the behavioral problem in students effectively. Love is sensitive to the feelings of students. Happy relationships among students and teachers flower in the warmth of love. It is a state of wishing the wellbeing of students unconditionally and unselfishly, a virtue which has no place of hatred, jealousy, competition, anger or ill-will. Teachers' love helps to overcome the source of fear, worries especially in students by promoting better understanding and appreciation.

### **11. *Patience***

Patience is the quality of character of being tolerant, the quality of enduring without complaints. It is the quality of forbearing towards the fault of or the infirmities of others, a quality of being able to endure calmly, any trouble, annoyance, delay or suffering. Patience urges an individual to manifest calmness and composure in the face of events beyond his or her control such as extremities of weather or climate. Those people who have the quality of patience, accept their own self as what they are, resigned and tolerant of their own weakness and faults. Impatience, makes an individual, restless, fretful, intolerant, unable to wait in case of any delay as this is easily flustered, arouse to anger, uneasy, each of which is discernible in his behavior. Moreover, it leads to hasty reactions and ill-founded judgments, which cloud an individual's mind, blocking his thinking capacity precipitating rash and immature decisions. On the contrary, patience evaluates every situation calmly, judges rationally and acts accordingly without mental or emotional perturbation. Patience makes a man level headed and well balanced. Any good worthwhile task usually takes more time and effort than one's anticipation and to

get success in it, one needs patience. Cultivating and sustaining relationships also require patience. In classroom or in the games field a teacher will have to come across many occasions where s/he will have to exercise the value of patience by maintaining one's equilibrium in times of stress and tension, by responding patiently to the queries of the students. Patient teacher bears with the limitations of the students, conscious of their inequality, helps progress of weak or slow students through patient understanding of their problems, taking into consideration of their feelings. Patience demands some considerations to be given to the feelings of others. A teacher maintains patience by tolerating the limitations of colleagues especially those in authority, putting up with the unpleasant and provoking situations, remaining patient when the going is unpleasant, and there is opposition, criticism, hardship and misunderstanding. A patient teacher evaluates a situation calmly, judges rationally and acts accordingly.

## **12. *Kindness***

Kindness is a quality of character having a benevolent, friendly, generous, gentle, liberal, sympathetic or warm-hearted nature or disposition. Kindness is a behavior marked by ethical characteristic, a pleasant disposition and concern for others, helpfulness towards some in need, not expecting anything in return to oneself but for advantage of others. In the world that is seemingly laden with negativity and hardship, making a determination to show kindness to others both in our thoughts and deeds can go a long way in helping us not only find a sense of inner peace but true happiness as well. Kindness is a remarkable quality for a teacher; a kind teacher keeps a friendly attitude to

one's students will not like to give punishments to students, and also not humiliate them. Small acts of kindness on the part of a teacher, heightens the sense of wellbeing of the students, increases their energy and enthusiasm and create a wonderful feeling of optimism and self-worth. It is quite natural that some students may be stubborn or disobedient, but a kind teacher can transform them without any punishment but by making them understand the correct approach, which will do them good. There may be some students who have destructive tendencies. A kind teacher can transform the destructive tendency to constructive ones of students. Students from the tender age itself should be trained to shun violence and follow non-violence in all their acts and deeds. Certain pranks of students like throwing stones at animals, birds etc. should be stopped by the teacher by using kind words and convince them the harmful effects. Similarly, the destructive tendency of spoiling the environment should be curbed. A kind teacher is the right choice to transform the destructive tendencies of students to constructive ones and if a student at young age is transformed, he will turn up to be a right type of citizen tomorrow and he will not involve into violent activities.

### **13. *Empathy***

Empathy is the quality or character of one's efficiency to identifying oneself with others and resulting capacity to feel or experience sensation, emotion, and thoughts similar to those being experienced by others. Concern and fellow feelings mark the characteristic of such a person. This value is of great importance and essential for a teacher. An empathic teacher has

the ability to enter into his/her students' shoes and feel the pulse to understand what problems they are passing through, what all difficulties are coming in the way of their progress, their discomfort and the stress that the students are undergoing and become a partner in the walk to resolve their problems. Acknowledging and reflecting back their feelings give the students an assurance that the teacher has understood them. Irrespective of child's behaviour, academic inadequacies, acceptance of the child is unconditional because one wants to help, care and improve the child. This type of unconditional caring makes students feel better about themselves. An understanding and helping teacher becomes accessible and friendly person with whom the students share their joys and sorrows, problems and difficulties. When the students share their joys, sorrows, problems and difficulties honestly with the teacher, this helps the teacher to understand the students more and help them and in this way, the teacher will be able to maintain a harmonious relationship with the students and also the teacher can even anticipate issues that the students may have to face in the future. The teachers' power to appreciate students' progress helps to motivate the students, lead to better progress. Also, an empathetic teacher can easily identify the weak students and encourage them to a better position by giving remedial classes in school.

#### **14. *Inoffensiveness***

Inoffensiveness is the quality of being harmless, not causing displeasure, trouble, annoyance to anyone, not aggressive, not injuring the feelings of others, and unoffending. A teacher who

practices inoffensiveness, in his/her value system will not complain students' misbehaviour to their parents at the first instance. Instead tries to correct the student and will inform later. If teacher complain in the first instant itself, there are chances of their parents punishing or scolding their children in which case there is a chance of student becoming aggressive and behaving worse in the class. An inoffensive teacher won't speak degradingly of students, even though they are not good achievers, with their parents, friends or relatives. An inoffensive teacher won't speak degradingly of other staff members. Inoffensiveness is one of the most crucial quality a teacher should develop in order to improve the relation with students, colleagues and management. The students would like a teacher who respects their sentiments, inoffensive in their speech and behaviour and having self-control.

### **15. *Forgiveness***

Forgiveness is the quality of an individual to grant for pardoning others graciously for faults or offences they have implicated; to cease to blame or feel resentment against ill feelings to offer reason/apology for an error; to be merciful and compassionate in his dealings with others. Deep injuries, inflicted if not forgiven, harm both offended and the offender. Hence it is true to say forgiveness is, blessings on both the forgiver and the forgiven. Forgiveness is an act, which is divine; for *to err is human*, and it builds a bridge of human understanding. Forgiveness relieves the guilty feelings and past offences patching up the broken relationships with magnanimity and clemency. Unforgiveness breeds animosities, bitterness, anger, hatred and revenge and

carries the offensive load of the past with all enmities, bitter, hostile, hatred into the present, dragging it into the future. On the contrary forgiveness, with a purposeful turning back to forget will bring about a healing of the bad hostile memories. The magnanimity of forgiveness repays evil with good. Slightings and thoughtlessness on the part of colleagues provide occasion for the practice of forgiveness. Taking the first step to conciliate colleagues guilty of offence demonstrates the nobility of forgiveness. Teachers' attitude of forgiveness has the power to transform and inspire the students to recover their self-esteem. Forgiveness on the part of teacher encourages the students who are forgiven to shed all thoughts connected with the painful experiences of the injuries suffered and concentrate their mind to the studies.

#### **4.3.1.3 Development of *Universe of Content***

After identification of the components of traditionally accepted universal human values—Truth, Beauty, Goodness, with their behaviors as a reference, a large number of statements were developed by making an extensive study of literature from various sources—books on value education, teacher education; journals in value education; research papers, articles published in educational magazines; from recommendations of various commissions and committees on value education in India, from reviewing related literature for the present study. Another valuable source was the notes prepared by the investigator while attending workshops, seminars, conferences, on value education at National/International levels; and also, the notes taken down with

apt examples during the lectures of professors and lecturers while undergoing B.Ed. and M.Ed. courses.

Yet another valuable source was from the write-ups obtained by the investigator from the experienced, retired school teachers seeking a description of their experiences in character formation classes, their experiences of teacher student relationships, about their feelings and opinions on inculcating values to the students and values the teacher himself / herself should possess to achieve this effectively.

#### **4.3.1.4 Development of Statements**

From this, *universe of content*, sorted out statements expressing positive polarity (favourableness) and statements expressing negative polarity (unfavourableness). Next these statements were given the form of attitudinal statements, as per the requirements of Likert method. About writing attitude statements, Oppenheim (1966) mentions, “Remembering attitudes are emotional, we should try to avoid the stilted, rational approach in writing attitude statements, and select from the tape the more contentiously worded statements of opinion; we must not be afraid to use phrases, relating to feelings and emotions, hope and wishes, hates, fears and happiness.”

As per to the requirement of Likert method,

- i. Statements should express an opinion or feeling towards the traditionally accepted universal human values-Truth, Beauty and Goodness.
- ii. It is important that they express definite favorableness or definite unfavourableness to the traditionally accepted universal human values-Truth, Beauty and Goodness.

iii. After gathering the statements as per to the requirements of Likert method; they were edited keeping in view of the criteria mentioned below:

#### **4.3.1.5 Informal Criteria for Attitude Statements**

In making the initial list of statements following criteria as listed by Edwards (1957) on the bases of suggestions, given by Thurstone and Chave (1929), Likert (1932), Wang (1932), Bird (1940), Edwards and Kilpatrick (1948) were kept in view.

1. Avoid statements that refer to the past rather than to the present.
2. Avoid statements that are factual or capable of, have been interpreted as factual.
3. Avoid statements that may be interpreted in more than one way.
4. Avoid statements that are irrelevant to the psychological object under consideration.
5. Avoid statements that are likely to be endorsed by almost everyone or by almost no one.
6. Select statements that are believed to cover the entire range of the affective scale of interest.
7. Keep the language of the statements, simple, clear and direct.
8. Statements should be short, rarely exceeding twenty words.
9. Each statement should contain only one complete thought.
10. Statement containing universals such as *all*, *always*, *none*, and *never*, *often* introduce ambiguity and should be avoided.
11. Words such as *only*, *just*, *merely* and others of a similar nature should be used with care and moderation in writing statements.

12. Whenever possible, statements should be in the form of simple sentences rather than in the form of compound and complex sentences.

13. Avoid the use of words that may not be understood by those who want to be given the completed scale.

14. Avoid the use of double negatives.

From the *universe of content*, considering the fifteen components with their specified behaviours as reference, keeping in mind the requirements of Likert method and the informal criteria to be followed, the investigator constructed a rough scale with 358 statements. A letter was addressed to twelve experts in the field of education, seeking help from them for the validation of the statements and also their suggestions in terms of additions/deletions of any statement or modification, comments, acceptability of language while examining the coherence of statements with their components. The list of the experts is Appendix V. A copy of the letter, which was sent to the experts alongwith 358 statements is presented in Appendix VI.

#### **4.3.1.6 Expert Suggestions**

Most of the experts who responded to the letter of request have expressed:

The tool is very comprehensive and relevant.

The subject of your attitude research is important.

Your topic appears to me as apt at an appropriate period of time.

I have gone through the questionnaire of statements prepared by you and from the point of language and structure is quite in order.

You have analyzed each universal value in five components, that is ok.

There were suggestions such as:

To get meanings of each value from the standard Dictionary (to be understood for all sub-values).

To reduce the number of statements in each component, there are general statements and specific statements of that general statement. Due to general-specific statements, your rough scale has a large number of statements. General statements are short, simple and capable to cover so many things. They are better for a scale.

To carefully edit each statement with the help of the standards suggested by Edwards.

If your intention is to include ninety statements in the final form of the scale, then select 180 in the try-out scale. If you imagine ninety statements (fifteen components, six statements in which three positive and three negative) in the final form, select the best 180 statements from 358 statements and send these 180 statements to the experts or resource person for their opinion.

Another valuable suggestion obtained, was to reframe the statements with attitudinal verbs, such as; I appreciate..., I like..., I wish..., I accept..., I am glad..., I am happy when..., I care for..., It affects me..., I desire..., I am keen to..., I have reservation about..., I am inclined to..., I am tempted to..., I am fond of..., etc., for positive verbs and

I dislike..., I hate..., I object to..., I mind if I am provoked..., I avoid..., It repels me..., I am sick when..., I cannot bear..., I am shocked..., I cannot stand..., I become offensive..., It disgusts me..., I am nauseated..., etc., for negative verbs.

Yet another valuable suggestion was, to explain, 1) some psychologists consider attitude and value as synonyms, how will you defend your position to investigate ‘attitude toward value’.

2) how do attitude and value differ on the floor of human behavior. All the valuable suggestions of the experts, mentioned above were gratefully accepted and incorporated in the scale. To incorporate the last suggestion mentioned, a detailed description of attitudes and values was given in chapter I-Conceptual Framework; moreover, in chapter IV-Construction and Standardization of the Tool.

186 statements were selected, where one hundred statements were with positive polarity and eighty-six statements were with negative polarity. Each statement in the attitude scale expresses variable degree of agreement/disagreement. The five choices suggesting agreement/disagreement are Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree represented by SA, A, U, D, and SD respectively.

These 186 statements were scrutinised by two experts in the field of education. After their consent the statements were randomly arranged in each component then they were assigned numbers from one to one hundred and eighty-six. The try-out form was available. The distribution of 186 statements of the try-out form of the attitude scale according to components and polarity is presented in the table below.

**Table: 4.2**  
**Distribution of 186 Statements of the**  
**Try-out Form of Attitude Scale according to**  
**Components and Polarity**

Components	Statement Numbers with Positive Polarity	Statement Numbers with Negative Polarity	Total Number of Statement
Impartiality	1, 2, 3, 5, 6, 7, 12	4, 8, 9, 10, 11	12
Responsibility	13, 14, 15, 16, 17, 20	18, 19, 21, 22, 23	11
Integrity	24, 25, 26, 27, 28, 29, 30	31, 32, 33, 34, 35, 36, 37, 38	15
Faith	39, 40, 41, 42, 47, 48, 50	43, 44, 45, 46, 49, 51	13
Courage	55, 57, 58, 59, 60, 61, 64	52, 53, 54, 56, 62, 63	13
Punctuality	65, 67, 68, 69, 70, 71, 74, 77	66, 72, 73, 75, 76, 78	14
Regularity	79, 81, 82, 83, 85, 86	80, 84, 87, 88, 89, 90	12
Cleanliness	91, 92, 93, 94, 99, 102	95, 96, 97, 98	10
Politeness	103, 104, 105, 106, 107, 109, 110	100, 108, 111, 112, 113, 114	13
Love	115, 116, 117, 120, 123, 124, 126	101, 118, 119, 121, 122, 125	13
Patience	129, 131, 133, 136, 137	127, 128, 130, 132, 134, 135	11
Kindness	139, 140, 141, 145, 146, 147	138, 142, 143, 144, 148, 149	12
Empathy	151, 152, 153, 154, 156, 160, 162	150, 155, 157, 158, 159, 161	13
Inoffensiveness	163, 164, 165, 166, 168, 174	167, 69, 170, 171, 172, 173	12
Forgiveness	175, 176, 178, 180, 181, 182, 184, 186	177, 179, 183, 185	12
Total	100	86	186

#### **4.3.2 STEP II Try-out of the Scale**

The response sheet consists of two parts

1. The demographic details and
2. The response performa.

The demographic details of the respondents which are to be filled in by him/her includes:

1. Gender (Sex) - Male/Female,
2. Qualifications - Graduation/ Post graduation/ any other,
3. Section of Working - Primary/Secondary/Higher Secondary,
4. Teaching Experience - up to 10 years/11-20 years/21 years and above,
5. Name of school.

Name of the respondent was deliberately not included in the demographic details to protect the privacy of the respondent as well as to give him/her a free hand to express his/her views. The response sheet with demographic details is presented in Appendix VII.

Response performa includes a request to the respondents with clear instructions followed by attitude scale with 186 statements to be filled by the respondents. Very clear instructions, which were to be easily understood by teachers, were included in the response sheet. The statements were on the left side and the blocks for teachers to represent their feelings on the right. While an individual respondent responds to the scale s/he would read each statement, which describes the hypothetical situation. It was expected that s/he would place herself/himself in the situation represented in the statement; would decide one of the five options, namely; strongly agree, agree, undecided, disagree, strongly disagree and indicate it by putting a tick mark (√) in the corresponding box and s/he will be answering which position s/he is opting for. The response performa alongwith the attitude scale with 186 statements used for the tryout study is given in Appendix VIII.

#### **4.3.2.1 Scoring Procedure**

Each statement in the attitude scale was followed by five responses, one of which was to be selected by the respondent.

These responses, indicating degree of strength of the attitude were:

Strongly Agree	(SA)
Agree	(A)
Undecided	(U)
Disagree	(D)
Strongly Disagree	(SD)

Arbitrary scoring weights 5, 4, 3, 2 and 1 were used for SA, A, U, D, and SD respectively for statements with positive polarity. The scoring weights of 1, 2, 3, 4 and 5 were used for SA, A, U, D, and SD respectively for statements with negative polarity. A teacher's score on the attitude scale was the sum of his rating on all items.

#### **4.3.2.2 Interpretation of Score**

Interpretation of an attitude score on a summated rating scale cannot be made independently of the distribution of scores of some defined group. In attitude scale of the present study with 186 statements, the maximum score obtainable would be 930, and the minimum score obtainable would be 186. In general, in scaling the statements one end of the continuum has been defined as unfavourable and the other end favourable with the middle category being defined as *neutral* (undecided). If a respondent obtained the minimum score 186, we could interpret this score as indicating an unfavorable attitude, since in order to obtain this score, the respondent would have had given a *strongly agree* response to every unfavorable statement and a *strongly disagree* response to every favorable statement. Similarly, we could interpret the score 930 as indicating favorable attitude, since this score could be attained only if the respondent gave a *strongly agree* response to every favorable statement and *strongly disagree* response to every unfavorable statement.

The interpretation of the scores falling between the maximum i.e. 930 and the minimum i.e. 186 is more difficult if our interest is in describing a respondent as having either a favorable or an unfavorable attitude towards the universal human values. This is because the summated rating score corresponding to *neutral point* on a favorable-unfavorable continuum is not known nor is there any evidence to indicate that a neutral point on a summated rating scale necessarily corresponds to the midpoint of the possible range of scores. The absence of knowledge of such a point is not a handicap since our interest is in comparing the mean attitude scores of two or more groups.

#### **4.3.2.3 Administration of the Try-out Scale**

The principals of the schools selected for the pilot study were approached and apprised of the preliminary draft of the scale. A forwarding letter seeking permission, addressed to the principals was attached and assurance was given that the data collected would be used for the research procedures only and confidentiality would be maintained. The copy of this letter to the principal is presented in Appendix IX. After seeking their consent, the response sheets were administered to a sample of 400 teachers. These 400 teachers were not included for the final draft. Four days time was given to the teachers so that they could answer leisurely without tension of interference of busy schedule of the schoolwork and they express their true opinions. The 400 response sheets in envelopes, duly filled by the teachers, were collected from the principals on appointed time.

### 4.3.3 STEP III Selection of Statements

Likert type scales are developed by utilizing the *item analysis* approach in which a particular statement is evaluated on the basis, of how well it discriminates between those respondents whose total score is high and those whose total score is low. Those statements, which best meet this type of discrimination test are included in the final draft. This procedure suggested by Likert is mentioned below.

After collection of the response sheets, the responses were scored as mentioned in the scoring procedure. Thereafter total score (attitude score) of each respondent (teacher) was calculated. For 186 statements, maximum score attainable on a scale was 930 and minimum score was 186. These total scores of all the 400 teachers were arranged in descending order from the highest to the lowest and 25 % of the teachers with high scoring totals (H group) and 25 % of the teachers with low scoring totals (L group) were considered for item analysis.

The number of teachers in H group,  $n_H = 100$ . The number of teachers in L group,  $n_L = 100$  These two groups are the criterion groups (contrast groups) for ascertaining the discriminating power of each statement. In both higher group and lower group, for each statement mean, S.D and t-values were calculated. The value of t is the measure of the extent to which a statement differentiates between the two criterion groups, H group and L group.

For value of  $t \geq 2.60$  indicates that the average response of the high and low groups to a statement differentiates significantly. From the table 4.3 it is evident that for the statement numbers 13, 20, 22, 32, 51, 62, 64, 74, 77, 80, 87, 129, 130, 148, 162, 168, 177, 178 and 182; did not satisfy the criterion. Since the t-values

of the nineteen statements were not significant they were rejected. Out of the remaining 167 statements, those statements with the largest t-values were selected including six statements in each component. Greater the t-values, higher the discriminating power. The mean, standard deviation and t-values of 186 statements of the attitude scale for the preliminary draft is presented in the following table.

**Table: 4.3**  
**Mean, Standard Deviation and t-values of 186 Statements**  
**of the Attitude Scale for the Preliminary Draft**  
**of the Try-out Scale**

Statement Number	Higher Group		Lower Group		t -values
	Mean	Standard Deviation	Mean	Standard Deviation	
1	4.63	0.74	4.18	1.00	3.46
2	4.41	0.73	4.00	0.93	3.42
3	4.75	0.77	4.17	1.02	4.46
4	4.48	0.78	3.55	1.51	5.47
5	3.78	1.08	3.37	1.02	2.73
6	4.28	0.93	3.87	1.13	2.73
7	4.37	1.15	3.88	1.20	2.89
8	4.70	0.64	3.58	0.75	11.42
9	4.53	0.61	4.22	0.81	3.10
10	4.69	0.75	3.93	1.33	5.07
11	4.22	1.23	3.52	1.35	3.89
12	3.85	1.06	3.33	1.33	3.06
13	4.15	0.82	4.04	0.80	1.00
14	4.48	0.56	3.91	0.86	5.70
15	4.53	0.61	4.22	0.81	3.10
16	4.46	0.67	3.83	0.37	7.88
17	4.80	0.47	4.23	0.84	5.94
18	4.64	0.77	3.40	1.36	7.75
19	3.86	1.22	2.89	1.24	5.71
20	2.96	0.98	2.87	1.45	0.53
21	3.74	1.07	2.77	1.10	6.47
22	3.12	1.11	2.89	1.23	1.35
23	3.26	0.74	2.86	1.26	2.67
24	4.25	0.94	3.57	1.16	4.53
25	4.38	1.34	3.56	1.22	4.56
26	4.46	1.07	3.57	1.33	5.24
27	4.22	1.23	3.52	1.35	3.89
28	4.68	0.47	3.83	0.40	14.17
29	3.85	1.06	3.33	1.33	3.06
30	4.24	1.34	3.77	1.15	2.61
31	4.31	0.75	3.01	1.32	8.67
32	3.29	1.53	3.25	1.17	0.21
33	4.50	0.82	3.27	1.16	8.79

Statement Number	Higher Group		Lower Group		t -values
	Mean	Standard Deviation	Mean	Standard Deviation	
34	3.26	0.74	2.86	1.26	2.67
35	4.75	0.63	3.56	1.28	8.50
36	3.71	1.19	3.17	1.25	3.18
37	4.43	0.88	2.89	1.48	9.06
38	3.75	1.22	3.02	1.02	4.56
39	4.67	0.76	3.97	1.04	5.38
40	4.62	0.57	3.83	1.07	6.58
41	4.61	0.65	3.81	1.19	5.71
42	4.77	0.45	4.17	0.89	6.00
43	4.17	1.09	3.27	1.46	5.00
44	3.96	0.96	3.17	1.19	5.13
45	3.76	0.98	3.02	1.26	4.63
46	3.44	1.15	2.74	1.03	4.38
47	3.90	1.17	2.97	1.10	5.81
48	4.31	0.75	3.65	1.14	4.71
49	3.68	1.11	2.98	1.16	4.38
50	4.05	0.95	3.66	1.15	2.60
51	2.52	1.32	2.72	1.15	-1.11
52	4.06	1.03	3.00	1.26	6.63
53	4.03	0.78	3.43	0.74	5.45
54	3.90	1.17	2.97	1.10	5.81
55	4.11	0.73	3.40	1.15	5.07
56	3.95	1.12	2.88	1.25	5.12
57	4.51	0.78	3.88	0.96	5.25
58	4.15	0.73	3.42	1.05	5.62
59	4.62	0.49	3.82	0.98	7.27
60	4.86	0.35	3.91	1.04	8.64
61	4.70	0.46	3.54	1.01	10.55
62	2.92	1.40	2.66	1.21	1.44
63	3.90	0.89	2.70	1.02	8.57
64	4.02	1.17	3.65	1.06	2.31
65	4.69	0.70	4.18	0.85	4.64
66	3.45	1.11	2.85	1.18	3.75
67	4.11	1.14	3.48	0.96	4.20
68	4.39	1.54	3.63	1.12	4.00
69	4.42	0.91	3.55	1.32	5.44
70	4.05	0.95	3.66	1.15	2.60
71	4.45	0.78	3.88	1.02	4.38
72	4.27	0.95	3.09	1.30	7.38
73	4.18	0.93	2.97	1.24	7.56
74	4.02	1.17	3.65	1.06	2.31
75	3.50	1.20	2.89	1.21	3.59
76	4.68	0.58	3.36	1.28	9.43
77	2.45	1.32	2.70	1.23	-1.39
78	4.46	0.83	3.90	0.89	4.67
79	4.27	1.11	3.03	1.33	7.29
80	2.34	1.22	2.47	1.24	-0.76
81	4.13	0.83	3.63	1.02	3.85
82	4.27	0.76	3.48	1.21	5.64
83	4.37	0.74	3.76	1.07	4.69
84	3.65	1.27	2.89	1.20	4.22
85	4.27	1.05	3.53	1.33	4.35
86	4.63	0.48	3.60	1.20	7.92
87	2.87	0.83	2.76	1.26	0.73
88	3.57	1.22	2.76	1.14	4.76

Statement Number	Higher Group		Lower Group		t -values
	Mean	Standard Deviation	Mean	Standard Deviation	
89	4.14	0.86	2.97	1.15	8.36
90	3.82	1.15	3.07	1.21	4.41
91	3.65	1.27	2.89	1.20	4.22
92	4.80	0.40	4.00	1.00	7.27
93	4.27	0.76	3.48	1.21	5.64
94	4.82	0.22	3.95	0.93	9.16
95	4.73	0.46	3.20	1.51	9.56
96	4.23	0.85	2.94	1.10	9.21
97	3.86	1.22	2.89	1.24	5.71
98	3.64	1.42	2.61	1.17	5.72
99	4.72	0.51	3.62	1.31	7.86
100	3.90	1.07	2.65	1.07	8.33
101	3.90	1.07	2.81	0.85	7.79
102	4.82	0.39	3.83	0.99	9.00
103	4.61	0.49	3.65	1.03	8.73
104	4.71	0.52	3.81	1.06	7.50
105	4.17	1.09	3.27	1.46	5.00
106	4.45	0.78	3.88	1.02	4.38
107	4.34	0.20	3.63	0.96	7.24
108	3.68	1.11	2.98	1.16	4.38
109	4.26	0.61	3.49	1.19	5.92
110	4.44	0.61	3.91	0.88	4.82
111	3.68	1.11	2.98	1.16	4.38
112	3.87	0.99	2.98	1.22	5.56
113	4.38	0.69	3.25	1.20	8.07
114	3.75	1.12	2.88	1.25	5.12
115	4.15	0.91	3.36	1.20	5.27
116	4.40	0.71	3.51	1.23	6.36
117	4.55	0.66	3.71	0.97	10.25
118	3.61	1.30	2.74	1.04	5.44
119	3.94	0.98	2.83	1.17	7.40
120	4.56	0.59	3.82	1.08	6.17
121	4.88	0.66	3.76	0.95	5.17
122	4.44	0.61	2.94	1.17	11.54
123	4.56	0.81	3.72	1.00	6.46
124	4.31	0.71	2.92	1.27	9.27
125	4.31	0.71	3.56	1.09	5.77
126	4.20	0.69	3.46	1.11	5.69
127	3.22	1.48	2.61	1.02	3.39
128	3.19	1.16	2.44	1.05	4.69
129	4.25	0.75	3.51	1.04	0.74
130	4.49	0.61	3.16	1.19	1.33
131	4.05	0.98	3.40	1.13	4.33
132	3.99	0.97	2.97	1.17	6.8
133	4.41	0.69	3.71	1.02	5.83
134	4.04	1.33	3.04	1.20	5.56
135	3.72	1.33	2.45	1.20	4.28
136	4.40	1.51	3.62	0.99	4.33
137	4.08	0.94	3.28	1.13	5.33
138	4.18	1.01	3.09	1.15	6.81
139	4.76	0.42	3.81	0.97	8.63
140	4.20	0.69	3.46	1.11	5.69
141	4.01	1.10	3.50	1.12	3.19
142	4.05	0.90	2.95	1.10	7.86
143	4.42	0.76	3.02	1.19	10.00

Statement Number	Higher Group		Lower Group		t -values
	Mean	Standard Deviation	Mean	Standard Deviation	
144	4.28	0.99	3.56	1.12	4.80
145	4.14	1.15	3.35	1.12	4.94
146	4.46	0.61	3.53	1.06	7.75
147	4.48	0.78	3.55	1.51	5.47
148	2.69	1.18	2.33	1.03	2.25
149	4.88	0.66	3.76	0.95	5.17
150	3.82	1.01	2.84	1.20	6.13
151	4.24	1.36	3.64	1.01	3.53
152	4.45	0.78	3.43	1.16	7.29
153	3.05	1.32	2.49	0.99	3.29
154	4.63	0.48	3.83	0.88	8.00
155	4.12	0.81	2.97	1.23	7.67
156	3.22	1.16	2.26	1.30	5.65
157	3.99	0.79	3.33	1.13	4.71
158	4.05	0.84	2.44	1.35	10.06
159	3.74	1.15	2.91	1.23	4.88
160	3.96	1.08	3.32	1.22	4.00
161	3.73	1.08	2.92	1.14	5.06
162	3.77	0.88	3.46	1.14	2.21
163	4.23	0.80	3.43	1.08	6.15
164	3.96	1.08	3.32	1.21	4.00
165	4.28	0.99	3.56	1.12	4.80
166	3.93	1.35	3.43	0.95	2.94
167	4.39	0.91	3.24	1.29	7.19
168	4.05	0.84	3.74	1.20	2.07
169	4.22	0.87	2.76	1.18	9.73
170	4.25	0.74	2.82	1.29	9.53
171	3.05	1.31	2.49	0.99	3.29
172	3.78	0.95	2.53	1.15	8.33
173	3.66	1.11	2.61	0.98	7.00
174	4.12	0.95	3.28	1.21	5.60
175	4.30	0.77	3.59	1.09	5.46
176	4.88	0.66	3.76	0.95	5.17
177	3.14	1.42	2.95	1.23	2.05
178	3.82	1.16	3.47	1.27	2.06
179	3.22	1.16	2.26	1.30	5.65
180	4.49	0.61	3.78	1.05	5.92
181	4.46	0.75	3.76	0.89	5.83
182	4.21	0.95	3.62	0.95	0.52
183	3.40	1.46	2.49	1.07	5.06
184	4.53	0.74	3.76	0.95	6.42
185	4.40	0.71	3.51	1.23	6.36
186	4.52	0.50	3.76	1.03	6.90

#### 4.3.4 THE FINAL DRAFT OF ATTITUDE SCALE

The final draft of the attitude scale contained ninety statements. Out of which forty-seven statements were with positive polarity and forty-three statements were with negative polarity. The ninety statements were distributed over fifteen components, six in each component approximately three statements with positive

polarity and three statements with negative polarity. This distribution of ninety statements selected for the final draft as achieved from item analysis on fifteen components is presented in the following table.

**Table: 4.4**  
**Distribution of Ninety Statements selected**  
**for the Final Format of Attitude Scale according to**  
**Components and Polarity**

Components	Statement numbers with positive polarity			Statement numbers with negative polarity			Total
	1	2	3	4	5	6	
Impartiality	7	8	9	10	11	12	6
Responsibility	13	14	15	16	17	18	6
Integrity	19	20	23	21	22	24	6
Faith	27	28	29	25	26	30	6
Courage	31	32	33	34	35	36	6
Punctuality	37	38	40	39	41	42	6
Regularity	43	47	48	44	45	46	6
Cleanliness	50	51	52	49	53	54	6
Politeness	56	57	59,60	55	58		6
Love	63	65	66	61	62	64	6
Patience	68	71	72	67	69	70	6
Kindness	73	74	76	75	77	78	6
Empathy	79	80	84	81	82	83	6
Inoffensiveness	85	87	89,90	86	88		6
Forgiveness							
Total	47			43			90

#### **4.3.4.1 Administration of the Final Draft of the Attitude Scale**

The final draft of the attitude scale was administered to 600 teachers selected from forty-five schools, which were randomly selected from the remaining eighty-two schools. Following procedures were followed to collect the data for the final draft.

The principals of the schools selected for the final draft of attitude scale were approached and apprised of the final draft of the scale. After seeking their consent, the response sheets were administered to a sample of 600 teachers. Four days time was given to the teachers so that they could answer leisurely without tension of interference of busy schedule of the schoolwork and they express their true opinions. The 600 response sheets in envelopes, duly

filled by the teachers, were collected from the principals on appointed time.

The final draft of the attitude scale consisting of ninety statements, which was administered to 600 teachers, is represented in Appendix X. The scoring procedure details in the final draft were same as the scoring procedure used for the try-out scale.

Arbitrary scoring, weights 5, 4, 3, 2 and 1 were used for SA, A, U, D, and SD respectively for statements with positive polarity. The scoring weights of 1, 2, 3, 4 and 5 were used for the respective statements with negative polarity. A teacher's score on the attitude scale was the sum of his rating on all items.

After collection of the response sheets, the responses were scored as mentioned in the scoring procedure. Thereafter total score (attitude score) of each respondent (teacher) was calculated. The data of 600 teachers were available for hypotheses testing.

#### **4.3.5 PSYCHOMETRIC PROPERTIES OF DEVELOPED ATTITUDE SCALE**

Reliability and the validity are essential, to the effectiveness of developed scale. Validity is often thought of as the *accuracy* of the scale, while reliability is its *precision*. Reliability of a scale is closely associated with its validity. A scale cannot be valid unless it is reliable. However, the reliability of a scale does not depend on its validity.

Oppenheim (1966) stated that, "The degree of reliability (consistency) sets limits to the degree of validity possible. Validity cannot rise above a certain point if the measure is inconsistent to some degree. On the other hand, if we find that a measure has excellent validity, then it must also be reliable.

#### **4.3.5.1 RELIABILITY**

Reliability is the ability of a scale to measure consistently.

Oppenheim (1966) mentions, “The greater length and diversity of attitude scales make them more reliable than single questions, but even so complete consistency is difficult to achieve; people are bound to react somewhat differently to a scale when they are confronted by it a second time. Nevertheless, reliability coefficient of 0.80 or higher is quite common.”

Gay and Peter (2000) describe, “A high reliability coefficient indicates high reliability. If a test were perfectly reliable, the reliability coefficient would be 1.00...However, no test is perfectly reliable and as noted, scores are invariably affected by errors of measurement resulting from a variety of causes. High reliability indicates minimum error variance: the effect of errors of measurement is small.”

Gay and Peter (2000) continue, “Internal consistency is a commonly used form of reliability that deals with one test at one time. It is obtained through three different approaches: Split-half, Kuder-Richardson, and Cronbach’s Alpha. Each provides information about the consistency among the items in a single test. Because internal consistency approaches require only one test administration, sources of measurement errors, such as differences in testing conditions, are eliminated...Kuder-Richardson (KR-20) and Cronbach’s Alpha estimate internal consistency reliability by determining how all items on a test relate to all other items and to the total test. When its items or tasks are measuring similar things, they are internally consistent. KR-20 and Cronbach’s Alpha provide reliability estimates that are equivalent to the average of the split-half reliabilities computed

for all possible halves. KR-20 is a highly regarded method of assessing reliability, but is useful only to dichotomously scored items such as in multiple-choice items. If items have more than two scores, then Cronbach's Alpha should be used... Likert Scales are commonly used in many affective instruments. If numbers are used to represent the response choices, analysis for internal consistency can be accomplished by using Cronbach's Alpha."

In the present study Likert scale, which was constructed used five choices: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The scoring procedure was used for these five choices. The scoring weights 5, 4, 3, 2 and 1 were used for SA, A, U, D, and SD respectively for statements with positive polarity. The scoring weights of 1, 2, 3, 4 and 5 were used for SA, A, U, D, and SD respectively for statements with negative polarity. Hence *Reliability* of the scale was estimated by Cronbach's Alpha. Theoretical value of Cronbach's Alpha varies from 0 to 1. Ritter (2010), "However depending on the estimation procedure used, estimates of Cronbach's Alpha can take any value less than or equal to one including negative values, although only positive values make sense."

George and Mallery (2003), represented a commonly accepted rule of thumb for describing internal consistency as follows.

**Table: 4.5**  
**Table showing commonly accepted Rule of Thumb**  
**for Describing Internal Consistency-**  
**Cronbach's Alpha**

Cronbach's Alpha Internal Consistency	
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

For the developed scale with ninety statements Cronbach's Alpha was found to be 0.939, showing that the scale had excellent consistency, and hence the scale was reliable. Standard error of measurement was 0.12, which was negligible.

Cronbach's Alpha for ninety statements, taken in three groups; statements numbers 1-30, 31-60 and 61-90 was found to be 0.846, 0.860 and 0.848 respectively; which shows that the scale had good consistency. The results are represented on the following tables.

**Table: 4.6**  
**Distribution of Statements and Cronbach's Alpha**

Statement Numbers										N	Cronbach's Alpha
1	2	3	4	5	6	7	8	9	10	30	0.846
11	12	13	14	15	16	17	18	19	20		
21	22	23	24	25	26	27	28	29	30		
31	32	33	34	35	36	37	38	39	40	30	0.860
41	42	43	44	45	46	47	48	49	50		
51	52	53	54	55	56	57	58	59	60		
61	62	63	64	65	66	67	68	69	70	30	0.848
71	72	73	74	75	76	77	78	79	80		
81	82	83	84	85	86	87	88	89	90		
1	2	3	4	5	6	7	8	9	10	90	0.939
11	12	13	14	15	16	17	18	19	20		
21	22	23	24	25	26	27	28	29	30		
31	32	33	34	35	36	37	38	39	40		
41	42	43	44	45	46	47	48	49	50		
51	52	53	54	55	56	57	58	59	60		
61	62	63	64	65	66	67	68	69	70		
71	72	73	74	75	76	77	78	79	80		
81	82	83	84	85	86	87	88	89	90		

**Table: 4.7**  
**Pearsons Correlation Coefficient of Fifteen Components**  
**among themselves and Truth, Beauty, Goodness and Overall**

	<b>Impa</b>	<b>Resp</b>	<b>Inte</b>	<b>Fait</b>	<b>Cour</b>	<b>Punc</b>
Impartiality	1	0.558**	0.577**	0.340**	0.516**	0.402**
Responsibility	0.558**	1	0.617**	0.331**	0.513**	0.497**
Integrity	0.577**	0.617**	1	0.442**	0.637**	0.560**
Faith	0.340**	0.331**	0.442**	1	0.457**	0.462**
Courage	0.516**	0.513**	0.637**	0.457**	1	0.548**
Punctuality	0.402**	0.497**	0.560**	0.462**	0.548**	1
Regularity	0.375**	0.473**	0.546**	0.468**	0.535**	0.546**
Cleanliness	0.372**	0.442**	0.472**	0.305**	0.505**	0.479**
Politeness	0.440**	0.432**	0.464**	0.426**	0.533**	0.521**
Love	0.373**	0.428**	0.542**	0.376**	0.526**	0.489**
Patience	0.314**	0.297**	0.388**	0.413**	0.492**	0.367**
Kindness	0.393**	0.356**	0.487**	0.389**	0.554**	0.467**
Empathy	0.354**	0.465**	0.593**	0.385**	0.567**	0.525**
Inoffensiveness	0.371**	0.323**	0.409**	0.260**	0.456**	0.316**
Forgiveness	0.272**	0.303**	0.379**	0.277**	0.392**	0.424**
Truth	0.769**	0.785**	0.855**	0.653**	0.807**	0.638**
Beauty	0.498**	0.579**	0.657**	0.517**	0.673**	0.774**
Goodness	0.442**	0.450**	0.582**	0.444**	0.636**	0.537**
Overall	0.624**	0.663**	0.766**	0.590**	0.774**	0.716**

	<b>Regu</b>	<b>Clean</b>	<b>Poli</b>	<b>Love</b>	<b>Pati</b>	<b>Kind</b>
Impartiality	0.375**	0.372**	0.440**	0.373**	0.314**	0.393**
Responsibility	0.473**	0.442**	0.432**	0.428**	0.297**	0.356**
Integrity	0.546**	0.472**	0.464**	0.542**	0.388**	0.487**
Faith	0.468**	0.305**	0.426**	0.376**	0.413**	0.389**
Courage	0.535**	0.505**	0.533**	0.526**	0.492**	0.554**
Punctuality	0.546**	0.479**	0.521**	0.489**	0.367**	0.467**
Regularity	1	0.408**	0.503**	0.445**	0.398**	0.461**
Cleanliness	0.408**	1	0.615**	0.641**	0.403**	0.502**
Politeness	0.503**	0.615**	1	0.586**	0.504**	0.589**
Love	0.445**	0.641**	0.586**	1	0.526**	0.534**
Patience	0.398**	0.403**	0.504**	0.526**	1	0.507**
Kindness	0.461**	0.502**	0.589**	0.534**	0.507**	1
Empathy	0.563**	0.582**	0.626**	0.550**	0.499**	0.586**

	<b>Regu</b>	<b>Clean</b>	<b>Poli</b>	<b>Love</b>	<b>Pati</b>	<b>Kind</b>
Inoffensiveness	0.424**	0.534**	0.553**	0.572**	0.501**	0.483**
Forgiveness	0.396**	0.476**	0.489**	0.513**	0.395**	0.535**
Truth	0.620**	0.543**	0.591**	0.582**	0.490**	0.563**
Beauty	0.738**	0.806**	0.814**	0.800**	0.556**	0.548**
Goodness	0.577**	0.643**	0.712**	0.694**	0.749**	0.802**
Overall	0.711**	0.733**	0.778**	0.763**	0.658**	0.738**

	<b>Empa</b>	<b>Inof</b>	<b>Forg</b>	<b>Trut</b>	<b>Beau</b>	<b>Good</b>	<b>Over</b>
Impartiality	0.354**	0.371**	0.272**	0.769**	0.498**	0.442**	0.624**
Responsibility	0.465**	0.323**	0.303**	0.785**	0.579**	0.450**	0.663**
Integrity	0.593**	0.409**	0.379**	0.855**	0.657**	0.582**	0.766**
Faith	0.385**	0.260**	0.277**	0.653**	0.517**	0.444**	0.590**
Courage	0.567**	0.456**	0.392**	0.807**	0.673**	0.636**	0.774**
Punctuality	0.525**	0.316**	0.424**	0.638**	0.774**	0.537**	0.716**
Regularity	0.563**	0.424**	0.396**	0.620**	0.738**	0.577**	0.711**
Cleanliness	0.582**	0.534**	0.476**	0.543**	0.806**	0.643**	0.733**
Politeness	0.626**	0.553**	0.489**	0.591**	0.814**	0.712**	0.778**
Love	0.550**	0.572**	0.513**	0.582**	0.800**	0.694**	0.763**
Patience	0.499**	0.501**	0.395**	0.490**	0.556**	0.749**	0.658**
Kindness	0.586**	0.483**	0.535**	0.563**	0.648**	0.802**	0.738**
Empathy	1	0.557**	0.474**	0.614**	0.723**	0.806**	0.786**
Inoffensiveness	0.557**	1	0.517**	0.470**	0.608**	0.796**	0.688**
Forgiveness	0.474**	0.517**	1	0.420**	0.584**	0.731**	0.637**
Truth	0.614**	0.470**	0.420**	1	0.756**	0.660**	0.884**
Beauty	0.723**	0.608**	0.584**	0.756**	1	0.503**	0.940**
Goodness	0.806**	0.796**	0.731**	0.630**	0.803**	1	0.903**
Overall	0.786**	0.688**	0.637**	0.884**	0.940**	0.903**	1

\*\* Correlation is significant at the 0.01 level( 2-tailed)

\* Correlation is significant at the 0.05 level( 2-tailed)

Pearsons Correlation Coefficient of fifteen components among themselves and Truth, Beauty and Goodness was found to be significant at the 0.01 level.

## Abbreviations

Impartiality	Impa
Responsibility	Resp
Integrity	Inte
Faith	Fait
Courage	Cour
Punctuality	Punc
Regularity	Regu
Cleanliness	Clean
Politeness	Poli
Love	Love
Patience	Pati
Kindness	Kind
Empathy	Empa
Inoffensiveness	Inof
Forgiveness	Forg
Truth	Trut
Beauty	Beau
Goodness	Good
Overall	Over

### 4.3.5.2 VALIDITY

Validity is the most important characteristic an attitude scale can possess. It is the degree to which a scale measures what it is supposed to measure and, consequently permits appropriate interpretation of the scores. Validity is best thought of in terms of degree: highly valid, moderately valid, and generally invalid.

Scales that lack validity have systematic biases to them. Content validity is the degree to which a scale measures an intended content area. It requires both item validity and sampling validity. Content validity is determined by expert judgement. There is no formula by which it can be computed and there is no way to express it quantitatively.

The best evidence of content validity was obtained by detailed, systematic critical inspection of the scale by experts, at various stages while presentation of research proposal, while passing through various stages of construction of the scale. Validity of the developed scale was ensured by scrutinising the same by the experts in the field of education and following their valued suggestions, modifications and guidance and judgement.

Item analysis revealed that all the items were suitable items of the Likert type scale; most of the items exhibited adequate homogeneity in substantiating item validity with respect to the whole attitude scale.

**Table: 4.8**  
**Table showing Results of Item-Analysis done on**  
**Ninety Items on Fifteen Components**

<b>Components</b>	<b>Lower group %</b>	<b>Middle group %</b>	<b>Upper group %</b>	<b>Total</b>
Impartiality	26	53.5	20.5	100
Responsibility	21.8	57	21.3	100.1
Integrity	24.3	47.3	28.5	100.1
Faith	22.8	47.5	29.8	100.1
Courage	25.5	45.5	29	100
Punctuality	28	45	27	100
Regularity	26.5	50.3	23.3	100.1
Cleanliness	24.8	46.5	28.8	100.1
Politeness	28.3	43.8	28	100.1
Love	30.3	40	29.8	100.1
Patience	31	40.5	28.5	100
Kindness	25.8	45	29.3	100.1
Empathy	25.6	40.4	34.1	100.1
Inoffensiveness	26	51.5	22.5	100
Forgiveness	32.5	47.5	20	100
Truth	28.8	45.3	26	100.1
Beauty	29.3	44.8	26	100.1
Goodness	29.5	44	26.5	100
Overall	29.8	44	26.3	100.1

**Table: 4.8 a**  
**Table showing the ‘Items Retained’ after the Item-Analysis**

Components	Items Retained		
	Subdimension Level	Dimension Level	Overall Level
Impartiality	all	all	all
Responsibility	all	all	all
Integrity	all	all	all
Faith	all	all	all
Courage	all	all	all
Punctuality	all	all	all
Regularity	all	all	all
Cleanliness	all	all	all
Politeness	all	all	all
Love	all	all	all
Patience	all	all	all
Kindness	all	all	all
Empathy	all	all	all
Inoffensiveness	all	all	all
Forgiveness	all	all	all
Truth	all	all	all
Beauty	all	all	all
Goodness	all	all	all
Overall	all	all	all

**Table: 4.8 b**  
**Table showing the ‘Items Dropped’ after the Item-Analysis**

Components	Items Dropped		
	Subdimension Level	Dimension Level	Overall Level
Impartiality	none	none	none
Responsibility	none	none	none
Integrity	none	none	none
Faith	none	none	none
Courage	none	none	none
Punctuality	none	none	none
Regularity	none	none	none
Cleanliness	none	none	none
Politeness	none	none	none
Love	none	none	none
Patience	none	none	none
Kindness	none	none	none
Empathy	none	none	none
Inoffensiveness	none	none	none
Forgiveness	none	none	none
Truth	none	none	none
Beauty	none	none	none
Goodness	none	none	none
Overall	none	none	none

The item analysis showed that all the items in the fifteen components were retained in the Likert type scale; showing item-validity. Construct validity is the most important form of validity. Constructs underlie research variables and construct validity seeks to determine whether the construct underlying a variable is actually being measured. Construct validity was established by factor analysis.

Garrett and Woodworth (1961) explained, “In the statistical method called *Factor Analysis*, the inter-correlations of a large number of test are examined and if possible accounted for in terms of a much smaller number of more general *factors* or *trait categories*. The factors presumably run through the often, complex abilities measured by the individual tests. It is sometimes found, for example that three or four factors will account for the inter-correlations obtained among fifteen or more tests. The validity of a given test is defined by its factor loadings and these are given by the correlation of the test with each factor.” Data were analyzed by means of Principal Component Analysis, with Varimax rotation. The various indicators of factorability were good. This indicates that the solution was a good one. Two components with Eigen value greater than one (7.583,1.243) were found. The table below represents it.

**Table: 4.9**  
**Table showing Eigen Values, Percentage of Variance and Cumulative Percentage**

Component	Initial Eigen Values			Extraction Sums of Squared	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	7.583	50.553	50.553	7.583	50.553
2	1.234	8.224	58.777	1.234	8.224
3	.857	5.712	64.489		
4	.706	4.706	69.195		
5	.584	3.893	73.088		
6	.571	3.808	76.896		
7	.519	3.463	80.359		
8	.499	3.329	83.687		
9	.444	2.957	86.644		
10	.411	2.737	89.381		
11	.372	2.477	91.859		
12	.361	2.404	94.263		
13	.315	2.097	96.359		
14	.307	2.048	98.407		
15	.239	1.593	100.000		

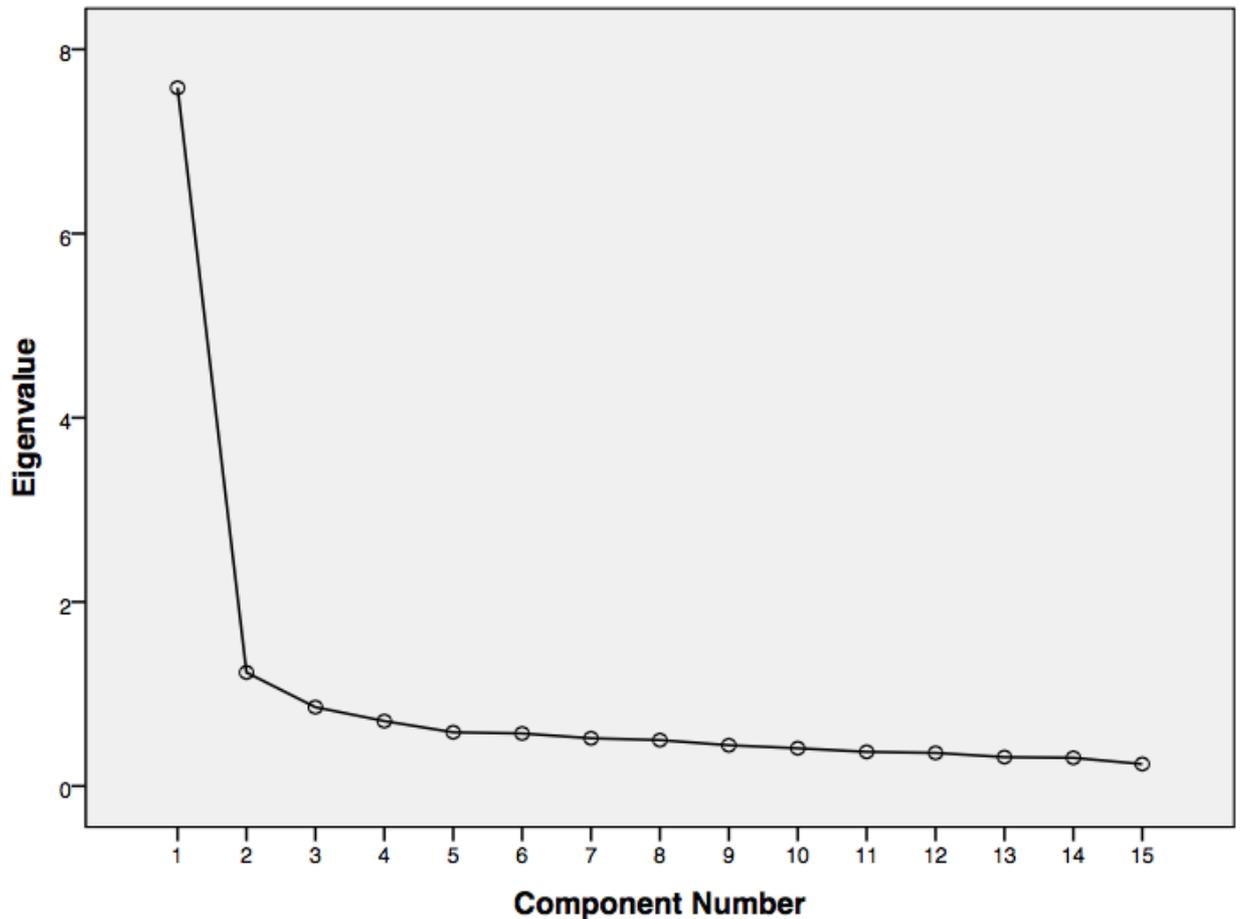
The higher the Eigen value, the higher is the value of variance explained by the factor. Looking at the cumulative percentage we find that the two factors extracted together account for 58.777% of total variance with Eigen values (7.583, 1.234). This is represented in the following table.

**Table: 4.10**  
**Total Variance explained showing Cumulative Percentages**

Components	Extraction...	Rotation Sums of Squared Loadings		
	Cumulative%	Total	% of Variance	Cumulative%
1	50.553	4.646	30.971	30.971
2	58.777	4.171	27.806	58.777
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

The Scree Plot also indicated two components.

**Figure: 4.1**  
**Showing the Scree Plot indicating Two Components**



All the five factor variables of Goodness (Inoffensiveness, Forgiveness, Kindness, Empathy, Patience) with the loadings 0.773, 0.727, 0.681, 0.658, 0.656 respectively loaded on component one; all the five-factor variables of Truth (Integrity, Responsibility, Impartiality, Courage, Faith) with loadings 0.783, 0.780, 0.724, 0.664, 0.572 respectively loaded on component two. Three factor variables of Beauty (Love, Politeness, Cleanliness) with loadings 0.717, 0.696, 0.685 loaded on component one and two factor variables of Beauty (Punctuality, Regularity) with

loadings 0.655, 0.611 loaded on component two. In component one the highest loading 0.773 is on inoffensiveness and the lowest loading 0.172 is on impartiality. In component two the highest loading 0.783 is on Integrity and the lowest loading 0.159 is on Forgiveness. These results are presented in the tables below. Validity is given by the high factor loadings.

**Table: 4.11**  
**The Rotated Component Matrix showing**  
**Factor Variables in Two Components**

	COMPONENT 1	COMPONENT 2
G Inoffensiveness	.773	.174
G Forgiveness	.727	.159
B Love	.717	.354
B Politeness	.696	.401
B Cleanliness	.685	.339
G Kindness	.681	.356
G Empathy	.658	.453
G Patience	.656	.257
T Integrity	.317	.783
T Responsibility	.174	.780
T Impartiality	.172	.724
T Courage	.444	.664
B Punctuality	.368	.655
B Regularity	.400	.611
T Faith	.267	.572

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.

**Table: 4.12**  
**The Two Components found by**  
**Principal Component Analysis and the**  
**Factor Variables that load on them**

COMPONENT 1	COMPONENT 2
Inoffensiveness	Integrity
Forgiveness	Responsibility
Love	Impartiality
Politeness	Courage
Cleanliness	Punctuality
Kindness	Regularity
Empathy	Faith
Patience	

#### 4.3.6 NORMS

Norms represent a descriptive framework for interpreting the test score of an individual or group. A raw score by itself has no

meaning. It gets meaning only when compared with some reference group or groups. Different types of norms are commonly derived from these comparisons.

In the present study for attitude scale, which was constructed to measure the attitude of the in-service teachers towards the traditionally accepted universal human values—Truth, Beauty, Goodness the following norms were derived.

1. Percentile Norms.
2. Gender Norms.
3. Qualification Norms.
4. Section wise Norms
5. Experience Norms

For the purpose of deriving these norms; mean, standard deviation, median, mode, skewness, kurtosis and percentiles were computed for the 400 in-service teachers.

The results are presented in the table below.

**Table: 4.13**  
**Mean, Median, Mode, Standard Deviation, Skewness,**  
**Kurtosis of the 400 In-service Teachers for**  
**establishing Norms**

		<b>Truth</b>	<b>Beauty</b>	<b>Goodness</b>
N		400	400	400
Mean		119.65	118.27	111.94
Std. Error of Mean		0.624	0.665	0.633
Median		122.00	119.00	113.00
Mode		122.00	119.00	114.00
Std. Deviation		12.4718	13.3071	12.6366
Skewness		- 0.694	- 0.405	- 0.205
Std. Error of Skewness		0.122	0.122	0.122
Kurtosis		0.733	0.961	1.223
Std. Error of Kurtosis		0.243	0.243	0.244
Percentiles	25	114.00	114.00	107.00
	50	122.00	119.00	113.00
	75	128.00	125.75	118.00

From the table 4.13, it can be observed that for the distribution of attitude scores of the 400 in-service teachers towards the traditionally accepted universal human value–Truth; the mean, median and mode were 119.65, 122.00 and 122.00 respectively. These values of mean, median and mode were different which shows that the distribution was skewed. The coefficient of skewness was  $-0.694$  revealing that the distribution was skewed negatively or to the left and the scores were massed at the high end of the scale (the right end) and were spread out more gradually towards the low end (or left). Mean was *pulled* in the direction of the extreme scores. Since the extreme scores affect the mean, and median is not, the mean is always closer to the extreme scores than the median. Hence, in the negatively skewed distribution, the mean is lower than the median. This can be observed from the table 4.13 that the mean was less than the median. It can be observed by looking at the negatively skewed distribution, most of the respondents had given positive responses, while few respondents had given negative responses. The standard error of the skewness was 0.122. The kurtosis was 0.733 and standard error of kurtosis was 0.243. The kurtosis was greater than 0.263 showing that the distribution, was Platykurtic in nature and flatter than the normal distribution.

From the table 4.13, it can be observed that for the distribution of attitude scores of the 400 in-service teachers towards the traditionally accepted universal human value–Beauty; the mean, median and mode were 118.27, 119.00 and 119.00 respectively. These values of mean, median and mode were different which shows that the distribution was skewed. The coefficient of skewness was  $-0.405$  revealing that the distribution was skewed

negatively or to the left and the scores were massed at the high end of the scale (the right end) and were spread out more gradually towards the low end (or left). Mean was *pulled* in the direction of the extreme scores. Since the mean, is affected by the extreme scores and median is not, the mean is always closer to the extreme scores than the median. Hence, in the negatively skewed distribution, the mean is lower than the median. This can be observed from the table 4.13 that the mean was less than the median. It can be seen by looking at the negatively skewed distribution, most of the respondents had given positive responses while few had given negative responses. The standard error of the skewness was 0.122. The kurtosis was 0.961 and standard error of kurtosis was 0.243. The kurtosis was greater than 0.263 showing that the distribution, was Platykurtic in nature and flatter than the normal distribution.

From the table 4.13, it can be observed that for the distribution of the attitude scores of the 400 in-service teachers towards the traditionally accepted universal human value–Goodness; the mean, median and mode were 111.94, 113.00 and 114.00 respectively. These values of mean, median and mode were different which shows that the distribution was skewed. The coefficient of skewness was  $-0.205$  revealing that the distribution was skewed negatively or to the left and the scores were massed at the high end of the scale (the right end) and were spread out more gradually towards the low end (or left). Mean was *pulled* in the direction of the extreme scores. Since the mean, is affected by the extreme scores and median is not, the mean was always closer to the extreme scores than the median. Hence, in the negatively skewed distribution, the mean was lower than the median.

This can be observed from the table 4.13 that the mean was less than the median. It can be observed by looking at the negatively skewed distribution, most of the respondents had given positive responses while few had given negative responses. The standard error of the skewness was 0.122. The kurtosis was 1.233 and standard error of kurtosis was 0.244. The kurtosis was greater than 0.263 showing that the distribution, was Platykurtic in nature and flatter than the normal distribution.

**Table: 4.14**  
**Percentile Norms for the Distribution of Attitude Scores of the 400 In-service Teachers towards the Traditionally Accepted Universal Human Values–Truth, Beauty, Goodness**

Percentile Score	Truth	Beauty	Goodness
Low	92.04 and below	90.04 and below	87.00 and below
Below average	93.00-113.00	91.00-113.00	88.00-106.00
Average	114.00-129.00	114.00-127.00	107.00-119.00
Above average	130.00-139.00	128.00-140.00	120.00-136.00
High	140.00 and above	141.00 and above	137.00 and above

**Table: 4.15**  
**Percentile Norms for the Distribution of Attitude Scores of the 400 In-service Teachers (321 Female and 79 Male) towards the Traditionally Accepted Universal Human Values- Truth, Beauty, Goodness**

Group	Percentile Score	Truth	Beauty	Goodness
Female	Low	94.00 and below	91.00 and below	88.00 and below
	Below average	95.00-114.06	92.00-114.00	89.00-107.00
	Average	115.00-129.00	115.00-128.00	108.00-119.00
	Above average	130.00-139.12	129.00-142.12	120.00-136.16
	High	140.00 and above	143.00 and above	137.00 and above
Male	Low	89.20 and below	85.20 and below	85.20 and below
	Below average	90.00-106.00	86.00-105.80	86.00-98.40
	Average	107.00-126.60	106.00-123.00	99.00-119.00
	Above average	127.00-139.80	124.00-137.00	120.00-137.00
	High	140.00 and above	138.00 and above	138.00 and above

**Table: 4.16**  
**Percentile Norms for the Distribution of Attitude Scores of the**  
**400 In-service Teachers (170 Graduate and 230 Postgraduate)**  
**towards the Traditionally Accepted Universal Human Values-**  
**Truth, Beauty, Goodness**

Group	Percentile Score	Truth	Beauty	Goodness
Graduate	Low	94.00 and below	91.84 and below	89.36 and below
	Below average	95.00-115.00	92.00-114.00	90.00-108.00
	Average	116.00-127.00	115.00-126.67	109.00-118.67
	Above average	128.00-139.16	127.00-142.16	119.00-136.64
	High	140.00 and above	143.00 and above	137.00 and above
Postgraduate	Low	90.00 and below	89.24 and below	86.20 and below
	Below average	91.00-111.00	90.00-112.00	87.00-104.00
	Average	112.00-130.00	113.00-128.00	105.00-119.00
	Above average	131.00-139.52	129.00-140.76	120.00-136.80
	High	140.00 and above	141.00 and above	137.00 and above

**Table: 4.17**  
**Percentile Norms for the Distribution of Attitude Scores of the**  
**400 In-service Teachers (236 Primary, 89 Secondary and 75**  
**Higher Secondary) towards the Traditionally Accepted**  
**Universal Human Values-Truth, Beauty, Goodness**

Group	Percentile Score	Truth	Beauty	Goodness
Primary	Low	100.96 and below	93.48 and below	88.48 and below
	Below average	101.00-116.00	94.00-114.00	89.00-108.00
	Average	117.00-129.00	115.00-128.00	109.00-119.00
	Above average	130.00-140.00	129.00-143.52	120.00-140.00
	High	141.00 and above	144.00 and above	141.00 and above
Secondary	Low	88.60 and below	84.00 and below	85.00 and below
	Below average	89.00-107.00	85.00-112.00	86.00-99.70
	Average	108.00-126.30	113.00-123.00	100.00-118.30
	Above average	127.00-135.80	124.00-138.00	119.00-130.40
	High	136.00 and above	139.00 and above	131.00 and above
Higher Secondary	Low	81.36 and below	85.04 and below	90.00 and below
	Below average	82.00-106.96	86.00-107.44	91.00-101.50
	Average	107.00-127.52	108.00-128.00	102.00-117.00
	Above average	128.00-143.72	129.00-138.92	118.00-126.00
	High	144.00 and above	139.00 and above	127.00 and above

**Table: 4.18**  
**Percentile Norms for the Distribution of Attitude Scores of the**  
**400 In-service Teachers (251 teachers with experience up to**  
**10 years, 100 teachers with experience 11-20 years and 49**  
**teachers with experience 21 years and above) towards the**  
**Traditionally Accepted Universal Human Values –**  
**Truth, Beauty, Goodness**

Group	Percentile Score	Truth	Beauty	Goodness
up to 10 years	Low	93.00 and below	90.08 and below	89.04 and below
	Below average	94.00-113.00	91.00-113.00	90.00-105.73
	Average	114.00-127.04	114.00-126.04	106.00-119.00
	Above average	128.00-140.00	127.00-144.00	120.00-140.00
	High	141.00 and above	145.0 and above	141.00 and above
11-20 years	Low	89.12 and below	91.00 and below	84.04 and below
	Below average	90.00-111.23	92.00-114.00	85.00-108.00
	Average	112.00-130.00	115.00-126.00	109.00-119.00
	Above average	131.00-137.00	127.00-138.00	120.00-129.96
	High	138.00 and above	139.00 and above	130.00 and above
21 years and above	Low	90.00 and below	85.00 and below	88.00 and below
	Below average	91.00-110.50	86.00-109.50	89.00-104.00
	Average	111.00-128.50	110.00-128.50	105.00-117.50
	Above average	129.00-137.00	129.00-137.00	118.00-132.00
	High	138.00 and above	138.00 and above	133.00 and above

In this chapter, the tool for the study-an attitude scale was constructed and standardized to measure attitude of the in-service teachers towards the traditionally accepted universal human values–Truth, Beauty, Goodness. The Attitude Scale consists of ninety statements distributed over fifteen components- *Impartiality, Responsibility, Integrity, Faith, Courage, Punctuality, Regularity, Cleanliness, Politeness, Love, Patience, Kindness, Empathy, Inoffensiveness, and Forgiveness.*

Standard norms have been established for Female and Male in-service teachers; Graduate and Postgraduate in-service teachers; Primary, Secondary, Higher Secondary in-service teachers; and in-service teachers with experience up to 10 years, 11-20 years, 21 years and above.

The Psychometric Properties, Reliability and Validity were developed. Reliability and Validity of the instrument have been estimated and found to be high. A reliable and valid tool - an Attitude scale is ready to serve the in-service teachers. Norms were derived and the tool, *Attitude Scale* was available for data collection. The procedure of data collection was described in the chapter III.