CHAPTER 2
MEANING AND NATURE OF ATTITUDE
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Before assessing the various aspects of students' attitudes towards Mathematics and its branches (Algebra and Geometry), it is necessary to understand the meaning and nature of attitude, so as to visualize the concept clearly.

2.1 Meaning of Attitude:

Like most abstract terms in English language, attitude has more than one meaning. Derived from the Latin 'aptus', it has on the one hand the significance of 'fitness' or 'adaptedness' and like its by-form aptitude connotes a subjective or mental state of preparation for action.¹

While referring the meaning of attitude mentioned as an article in an Encyclopedia (Britannica), "Attitude is a word having no precise technical meaning when used to describe human beings Psychology. It refers in a general way, to inclinations, presumed to be enduring to react in a certain way in response to certain kinds of situations, to see and interpret events according to some predisposition and to organize opinions into coherent interrelated clusters."²

While referring to dictionary meaning, Harriman in the

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New Dictionary of Psychology calls attitude as "a mental set to respond to a situation with a prepared reaction. Attitudes denote biases, perceptions, convictions, feelings and emotions, hopes and fears."³

Drever in the Dictionary of Psychology considers it "a more or less stable set or disposition of opinion, interest or purposes, involving expectancy or a certain kind of experience and readiness with an appropriate response."⁴

In the Dictionary of Philosophy and Psychology, Baldwin calls it "the readiness for attention or action of a definite sort."⁵

Good in the Dictionary of Education calls it "the predisposition or tendency to react specifically towards an object, situation, or value, usually accompanied by feelings and emotions."⁶

In the Dictionary of Psychology, Warren has told that, "Attitude = the specific mental disposition to ward an incoming

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(or arising) experience, whereby that experience is modified, or a condition of readiness for certain type of activity."^7

2.2 Definitions of Attitude:

There are a number of traditional definitions of attitude that may be cited as illustrative of common usage of the term:

English and English has defined attitude as "An enduring learned predisposition to behave in a consistent way towards a given class of objects."^8

Krech, D., Crutchfield, R. S., and Ballachey, E. L. consider attitude as "An enduring system of positive or negative evaluation, emotional feelings and pro or con action tendencies with respect to a social object."^9

Allport, G. W. has defined attitude as "A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's

response to all objects and situations with which it is related. 10

Thurstone, defines an attitude as the degree of positive or negative affect associated with some psychological object. 11

A definition has been given by compbell which is "an individual's social attitude is a syndrome of response consistency with regard to social objects." 12

According to M. Fishbein "Attitude is defined as an implicit, drive-producing response considered socially significant in the individual's society." 13

H. H. Remmer, Gage, N. L., and Rummel, J. Francis have defined attitude as an emotionalized tendency, organized through experience, to react positively or negatively towards a Psychological object." 14

Shaw, M. E. and Wright, J. M. have defined attitude as "a relatively enduring system of affective evaluative reactions

based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects.\textsuperscript{15}

Doob defines an attitude as "(1) an implicit response (2) which is both (a) anticipatory and (b) mediating in reference to patterns of overt behaviour responses (3) which is evoked (a) by a variety of stimulus patterns (b) as a result of previous learning or of gradients of generalization and discrimination. (4) which is itself cue-and drive producing (5) and which is considered socially significant in the individual's society."\textsuperscript{16}

2.3 Variation in the Definitions:

In the above mentioned definitions of the term attitude differences are observed. In this context, the issue concerns the degree to which attitude may be considered to have a specific referent. Some theorists tend to make attitude a generalized and pervasive disposition of the person. Other theorists consider attitudes to have specific referent, or specific class of referents. A review of the literature indicates the latter to be more common point of view.

A second source of variation in the definition of the term attitude results from the tendency to generalize the


construct to include any predisposition to respond.

A third source of variance in definitions of the construct attitude lies in the theoretical conception of the composition of an attitude.

2.4 Common Elements in the Definitions:

Despite the variation in the definitions of the term attitude, the existing definitions agree upon one common characteristic: "Attitude essentials an existing predisposition to respond to social objects which in interaction with situational and other dispositional variables, guides and directs the overt behaviour of individual."^{17}

Following are the common elements in almost all the definitions:

i) Attitude is a learnt predisposition.
ii) It is a hypothetical construct or an implicit response not directly open to observation but inferred from verbal expression.
iii) It is anticipatory and mediating with reference to patterns of overt responses.
iv) It is evoked by a variety of stimulus patterns as a result of previous learning.

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Attitude is a cue and drive-producing.

It is significant in the individual's Society, as it describes, evaluates, directs and advocates actions.

2.5 Attitudes And Similar Constructs:

In order to give a precise meaning to attitude, it is necessary to differentiate it from closely related psychological concepts.

(1) Opinion and Attitude:

English and English (1958) have called opinion "as a belief that one holds to be without emotional commitment or desire, and to be open to re-evaluation since the evidence is not affirmed to be convincing." 18

Attitude and opinion are supposed to have a very similar, if not identical in meaning. Attitude, however real may be for the possessor, cannot be seen. It is an abstraction, the existence of which is inferred either from non-verbal overt behaviour or from verbal or symbolic behaviour. Opinion is the factual statement about the environment and it is restricted to verbal expression. Point of difference between opinions and attitudes are:

1) Opinions are verbalizable, whereas attitudes are ‘unconscious’ or sometimes mediated by non-verbal process.

ii) Opinions are responses, whereas attitudes are response predispositions.

McNemar (1946) has given the following distinction between opinion and attitude: "The typical attitude study involves a scale or battery of questions for ascertaining attitudes whereas the typical opinion, particularly public opinion study leans heavily on a single question for a given issue." The objective index of a person can be called opinion and the inferred subjective inclination of the person may be called his attitude. Opinion may be interpreted as a symbol of attitude and can be used as a means for measuring attitudes.

(2) Belief and Attitude:

Belief is a conscious or unconscious proposition which can be inferred from a person's verbal responses or actions. A belief describes an object, evaluates a situation and advocates the course of action. English and English (1958) define a belief as "the emotional acceptance of a proposition or doctrine on what one considers to be adequate grounds."  


A belief system represents the total universe of person's beliefs, about the psychological world, the social world and the self. This belief system is further analyzed in terms of subsystems. An attitude is one type of subsystem of beliefs organized around an object or situation.

Krech and Crutchfield (1948) hold that "all attitudes incorporate beliefs but not all beliefs are necessarily part of attitudes". Attitudes are learned predispositions to respond to an object or class of objects in a favourable or unfavourable way. Beliefs are hypotheses concerning the nature of these objects and the types of actions that should be taken with respect to them. Thurstone (1931) has viewed the belief as expression of attitudes and as the means for measuring attitudes.

(3) Value and Attitude:

Value has been defined by English and English (1958) as "degree of worth ascribed to an object or activity (or class) thereof". Specific attitudes organizing into a hierarchical structure comprise value systems. The central value system comprised of related attitudes and beliefs shapes the entire personality of the individual. Attitude includes the affective

reactions which characterize the the-valuing process, giving rise to a motive value, is a sociological concept referring to the social meaning acquired by an object or action. Value can be called a form of belief centrally located within a person's total belief system guiding his behaviour. Values can also be called as abstract ideals, positive or negative not tied to any specific attitude, object or situation, representing a person's belief about ideas, modes of conduct and goals. Like beliefs values are held at the conscious or unconscious level and inferred from a person's behavioural or verbal responses. Beliefs are large in number, less larger in number are attitudes but values are few in number. Values can be classified into different categories : theoretical, social, political, religious, economic and aesthetic. It can be said that values are systematic organization of beliefs, attitudes and ideas of individual.

The dimensions of attitude can be understood more clearly if a clear distinction is made between beliefs and feelings and attitudes and value system. Feeling element is the affective component which refers to the intensity of an attitude. Belief or the cognitive component gives suggestion for two additional dimensions - the specificity or generality of the attitude and the degree of differentiation of the beliefs. A different dimension is provided by the extent to which an attitude is linked to a related value system and the number and strength of value system.
Motives and Attitudes:

Attitude can be called a tendency to become motivated with respect to a certain object or person. This motivation is consistently either positive approach or a negative avoidance. Both attitudes and motives refer to the directionality of behaviour but not to behaviour itself. Motive and attitude define what is preferred, expected and desired and marks off what is undesirable. In terms of its consequences in the person's behaviour, an attitude is goal-directed. So Sherif and Sherif (1956) have called an attitude as a sociogenic motive.

Newcomb (1950) has differentiated an attitude from a motive in two ways:

1) Attitude is not characterized by an existing drive-state but refers to the probability that a given motive and its accompanying drive may be elicited. Therefore, attitude is drive-producing.

2) An attitude is labelled by its object and may be considered object specific, whereas motives are labelled by their goals and are goal specific.

2.6 The Functions of Attitudes:

The functional basis of attitudes serves an important social need of a person. Holding an attitude means conferring meaning and order to some aspect of social environment.
Social attitudes establish a fundamental link between a person's ability to perceive, feel and learn and his continuing experience in a complex social environment. Katz (1960) has made a 'functional' approach to attitudes and states that attitudes perform four important functions for building the personality of an individual and have a motivational basis.  

1) The Instrumental function:

This function serves as the basis for modern behaviouristic learning theory. An individual is motivated to develop favourable attitudes towards objects bringing social approval and esteem of family friends and colleagues and learns to develop unfavourable attitudes leading to punishment and bringing frustrations. Perception of past and present utility of the object by the individual leads to the formation of attitudes. Closer and clear perception of objective for actual need satisfaction lead to positive attitude formation consistency of reward, and punishment contributes to the clarity of the instrumental object for goal attainment.

2) The Value expressive function:

A person may be a liberal or an enlightened

conservative or internationalist and may hold attitudes indicating his central value. The person may express, reflect attitudes of his ideals or self-image. A person gets satisfaction if he finds expression of any of the attributes related to his ego. For personality development, the clarity of self-image is very important. The basic self-concept is formed in the individual during the formative period of childhood. What is good and what is bad is to be accepted and generalized according to the models that are set by the elders. A new process quite different from childhood socialization takes place when the individual enters a new group or organization. Up to what extent the individual will internalize the values of these groups will depend on the combination of the following four factors:

1) When the value of the new group are highly consistent with the existing values central to personality.

2) When the new group ideology has a clear model of what the good group member should be and persistently indoctrinates group members in these terms.

3) When the activities of the group for reaching its goal permit the individual, real opportunity for participation and the member gets full opportunities to impress all his talents and to evolve his ego in the activities of the group.
iv) When the individual gets opportunity to share the reward of the group activity which includes his effort also.

3) The Knowledge function:

This function serves the human need to understand and make sense of, and give adequate structure to, the universe. Attitudes are maintained to reach that standard of mind which helps to understand the complex universe and which deal adequately with situations and structure experience meaningfully. Inadequate attitudes that are not able to deal with the new and changing situations and which lead to contradiction and inconsistency are discarded. The most important aspect of knowledge function is that it serves the need for the cognitive organization and brings cognitive consistency and clarity.

4) The Ego-defensive Function:

This is the fourth important function of attitudes. Self-concept, self-expression, self-development and self-realization are the outcomes of ego-defensive function. Adoption of attitudes by the individual for defending and protecting self from unpleasant truths and harsh realities, finding out devices to avoid facing the inner reality of one's own personality and outer reality of the insecurities of the world. There are defence mechanisms evolved to remove
temporarily the sharp edges of internal conflict. Feeling of inferiority are projected on some convenient minority groups or under-privileged groups. The expressed and projected attitude is created by the individual's emotional conflicts. Ego-defensive attitude has two side protectors known as prejudice and stereotypes.

(a) Prejudice: Cooper and Jahoda (1947) were of the opinion that highly prejudiced individuals react defensively, interpreting and distorting materials that attempt to caricature and ridicule their belief. Parents' power of authority over the child is a significant source of prejudiced attitudes. An authoritarian family structure may produce in the child an orientation to the world known as 'authoritarianism'. The authoritarian sees the world as a continuing struggle in which the strong dominates the weak. He is concerned with power is cynical about human nature, and is inclined to be stereotyped, and rigid in his thinking. With authoritarianism is associated a tendency to be prejudiced against unpopular minorities and to support extreme conservatism. Hostilities and resentment, which an individual is not able to express at home, are displaced on to subordinate groups. Prejudice is learnt and reinforced as a by-product of identification and socialization into one's own group. An individual learns to

conform and identify with his own group and at the same time learns to distrust all others. The adjustment and value-expressive functions defend the individual in this aspect of prejudice. Knowledge function also plays its part in the development and maintenance of negative beliefs if the prejudice is directed at a specific out group.

(b) Stereotypes: Allport (1954) calls it as an exaggerated belief associated with a category, which means to rationalize one's conduct in relation to category. Prejudice is different from stereotype in the sense that prejudice is expressed in terms of favourable or unfavourable attitudes, whereas stereotypes are expressed in terms of generalized feelings for any category. Stereotyping has three characteristics:

1) The categorization of persons.

2) A consensus on attributed traits.

3) A discrepancy between attributed traits and actual traits.

The four functions operate simultaneously in an attitude belief or ideology. The value function is super-ordinate function among all the functions. All attitudes and beliefs of a person are instrumental to the satisfaction of the pre-existing and often conflicting values.

all other functions can be termed under values as adjutive values ego-defensive values, knowledge and other self realizing values. This functional approach gives a clear idea about the role played by attitudes in personality dynamics and in the understanding of their relationships with other psychological process as perception learning memory thinking and forming judgements.

2.7 The Components of Attitudes:

Formation, organization and change of attitudes depend on the components. There are three important components, viz. (i) Cognitive, (ii) Affective, and (iii) Behavioural.

1) Cognitive: It includes a person's perception belief and stereotypes and opinion is a substitute for cognitive component. This component is inferred from what a person says and believes about an event or object. Consciousness is always in conjunction with cognitive component. Attitudes vary in degree to which the possessor can verbalize his awareness. Hovland et al. (1953) have given the distinguishing point between attitudes and opinions as awareness. 27

Opinions are verbal responses which are always accessible to awareness, whereas attitudes are verbal and non-verbal response predispositions which may or may not be available to awareness.

**ii) Affective** : Affective component includes the vigorous emotional feelings. It is the most deep-rooted component and under certain conditions most resistant to change. This implicit response is, by nature, evaluate and is based upon the conception of the object by the individual, specifying some degree of preferability. The precise nature of preferability depends upon the goal orientation of the individual.

**iii) Behavioural** : The behavioural component consists of the tendency to act or react towards the object in certain ways. This is the policy or action orientation which is measured by noting what the individual says he will do or preferably what he actually does. There are four general categories of behaviour:

1) Positive approach, e.g. friendliness,

ii) Negative approach, e.g. attack,

iii) Negative avoidance, e.g. repulsion, or fear, and

iv) Positive avoidance, e.g. allowing others privacy when they are stressed.

Attitude scales do not measure the approach avoidance dimension of this category system. They measure only the positive negative dimensions.
2.8 Dimensions of Attitudes:

It is helpful to think of attitudes as having various dimensions. Having these dimensions in mind teachers can lead to more adequate ways of thinking about the attitudes of their pupils.

1) Intensity: Intensity is the strength of the feeling. The more favourable or unfavourable the attitude, the more its intensity. For example attitudes towards "Progressive" education. People who are ardently in favour of or opposed to progressive education will be found on any large university campus, along with a neutral group whose attitudes show little intensity on the matter, and still another group that is actively unfavourable.

ii) Direction: Attitudes are of favourable or unfavourable aspects for example attitudes toward legal abortion may be favourable or unfavourable. The table of favourable and unfavourable attitudes towards a psychological object is a dimension of attitude.

iii) Salience: Salience is the readiness with which an attitude can be aroused its "closeness to the surface" in a person's mind. Some people, when asked what they

consider the most important problem facing humanity today, immediately think of preventing war others, the "curse of drink", still others, juvenile delinquency. Salience is best discovered by asking questions that allow the respondent's attitudes to appear freely. Among first graders, attitudes toward age groups are highly salient. When they meet a new child they are immediately impressed with whether or not he is older than they are. Among adults, attitudes toward occupations are more salient. When they meet a stranger, they are more interested in what kind of work he does. Their attitudes toward occupations are more likely to determine their respect for or interest in him.

iv) Generality: The number and variety of attitude objects toward which a person has a single, internal consistent, overall attitudes are a reflection of the generality of his attitude. Some people can be labeled "liberals" or "conservatives" because they have consistent attitudes toward a wide range of objects, such racial and nationality groups, government planning socialized medicine, federal aid to education and the like. Knowing whether a person is 'liberal', or conservative makes possible fairly accurate predictions of his attitudes toward a wide variety of topics. This facts means that, by and large, many attitudes tend to be highly generalized, with a wide range and substantial internal consistency.