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the teacher's role. Due to knowledge explosion, the task of teachers becomes more challenging. Knowledge has doubled and tripled within the last one decade, particularly, in the realm of science and technology. In order to make the students understand and think creatively, the teacher has to adopt new methods in science teaching. In our modern Scientific world, teachers have great opportunity to initiate changes in education. The teacher may act as an innovator, sharer and seeker of new practices. These new roles are more pertinent to teachers of developing countries like ours into limited resources at our disposal coupled with the vital need of rapid development.

Education is connected with Society. Efforts are being made to induce change in all directions in the society by many countries during the last quarter of century as necessary elements of modernization. International Co-operation and collaboration have come into existence among countries in promoting development among the various peoples. Increasing agricultural production, solving health problems, bettering the utilisation of resources efficiently and effectively and the results of all involve improving educational programmes, which has become the major concern in many countries. For achieving the above-said factors changes are needed in

people - i.e., changes in their value systems, attitudes, customs, traditions and practices, work habits, food-habits and ways of thinking. To usur in a good economic and social system, we need a significant degree of change in outlook and behaviour among people at all levels of society.

Since education and society are inter-related, change in society is dependent on correlative change in education. In order to bring about a change in education, we have to take further steps. The world itself is automatically and slowly changing. In winter season, we get more snow in certain parts of the world. But we can get snow in any season in any place by using proper methods. This is due to scientific inventions. In order to get multi-directional progress, within a short period in society, we can introduce change in education. In order to bring about good economic and social development with a view to eradicating poverty, change has necessarily to be introduced in education.

As far as the present educational situation of our country is concerned, it demands continuous change, if it is to keep abreast of the times. The philosophy of education, the principles of education, the methods, the procedures, the techniques and tools change according to the needs and demands of the times. As the individual has to play three roles namely, as an individual, as a member of the community

and as a member of the nation, the curriculum construction is mainly based on the demands of the individual development, demands of the community and the demands of the states or the existing Government. The individual as a citizen will have to integrate certain universal values into his life and these values also are subject to change from time to time. All these roles have to be played effectively by an individual. For playing these various roles, he will have to be open, change prone and adjustable to meet the accelerated rate of change in Society. Alwin Toffler's "FUTURE SHOCK" vividly portrays the need for such adjustability.

"The child is the father of the man", is a proverb. The child's future is in the hands of parents and teachers. Parents are the first teachers of children. Since our nation is mainly confined to the villages or rural area, the parents are mostly illiterate, they cannot therefore be the best teachers of children. So the whole responsibility of education of the child naturally falls on the teachers. It is the teacher who must prepare the children for the future. From this it is clear that the teacher must be capable of change, adjust according to the change, and adjust to the change in their particular set up.

No one can deny the fact that "Education" is the basis of all development. Education has thus been playing

a Herculean task for the development of the world. As we give more importance to education, more problems of the world can be solved.

So it is in the fitness of things to get multi-directional profits, in maximum possible ways, innovation in education should be carried over and necessary steps should be taken to diminish the effect of dissonance in teachers, in order to achieve desirable and worth while results from education.

1.11 SOCIAL CHANGE AND EDUCATION :

The role of education in any society has to be considered a little in this chapter. Mechanical and economical change can perhaps be easily brought about, but the infrastructure for all change is rooted in education. Education is instrumental in removing ignorance of the world and gives knowledge instead. This can be done only by education and thus the role of education in the society is invaluable and cannot be replaced by anything else.

As mankind advanced from its primitive state it felt the necessity to lead a comfortable life and therefore improved many things to suit its convenience. When man felt the necessity for the supply of water, dams were built and stored water was used to generate power. Generally speaking, in every stage in the

evolution of humanity, man has discovered and invented many things. Similarly, in the medical field great advancement has been made. By systematic study and scientific research man has steadily overcome many diseases. When man aimed at landing on the moon, he achieved this object by making suitable rockets.

Taking the above arguments, one can come to the conclusion, that the needs of the society are the motivating reasons for scientific inventions. Science is an integral part of education. Education stimulates thinking which results in the scientific inventions. So education and society are inter-related.

As Tennyson says, "The old order changeth, yielding place to new", unless there is progress, civilization cannot exist. Progress implies continuous change in the right direction. As we cannot visualise life without growth we understand that change is the very essence of life. This applies to individuals as well as society and the world as a whole. Progress is essential and stagnation is equivalent to death. The future of a child mainly depends upon nature of parents and teachers.

1.12 CHANGE AND INNOVATION :

The term education implies a planned change, over a period of time. In the behaviour of students 'Innovation' may be regarded as a species of the general change. The

term educational innovation implied a qualitative improvement in the present system through a moral idea. Innovations in Education are adopted to bring qualitative improvement. The basis for educational change is the innovation or creative idea of an individual or of a system as a whole.

The purpose of adoption activity is to adopt an innovation to the local situation. This is by no means an easy task. Every situation has its own peculiar characteristics, so that it is unlikely that an innovation can simply be fitted into place without considerable modification. Further, an innovation needs to be tested, before adoption.

Miles (1964) attempted some useful generalisations on the basis of a number of case studies of innovation in education. The generalisations present a comprehensive, agenda covering characteristics of educational systems, the innovation itself and innovating persons or groups. About the innovation itself Miles points out that some properties of the innovations itself are likely to affect its adoption and continued use. The properties are (1) Technological factors (2) Associated materials and (3) Implementation supports.

Adoption of a new practice, by an individual, in any field is not a sudden decision. It is a result of a process consisting of certain stages through which the individual passes. Wilkening (1952) was first to report

that adoption involves decision and it is a process composed of stages or steps. The adoption of a specific practice is not the result of a single decision to act, but of a series of actions. He used four stages : namely awareness, obtaining information, conviction, and adoption.

School is the target system in the innovation or change process. The researches in India on school system reveal two groups. One group was concerned with the social structure of school while the other group studied only one aspect of the school either the Principal or the teacher. The investigator feels that both the headmaster and teachers of the school are responsible for adoption or rejection of innovation.

Mukhapadhy (1974) revealed that a school with social structure characterised by personnel with higher enthusiasm, change proneness, democratic leadership of principal, supporting academic peer ascribed teachership from teachers and openness of climate was congenial for installation, implementation and institutionalisation of innovation.

Agarwal (1973) found that teacher rapport with principal, satisfaction with teaching, and community support of education predicted more innovative practices in the school.

Sharma (1975) concluded that the team spirit of teachers and the effective leadership of the principal were

responsible for change in central schools.

Buch (1972) studied forty-nine different variables pertaining to the principal's characteristics and his perceptions as predictors of school adaptability. Twenty-five variables were significantly related to school adaptability.

Rai (1972) studied thirty different characteristics of teachers as predictors of teacher's acceptance of innovations under the broad heads, namely, democratic variables, organisational climate and personality variables.

1.13 THE SIX TYPES OF CHANGES :

Havelock (1969) suggests that there may be six types of change required for adoption. They are viz:

(a) Substitution : Depending on the need, this may range from replacement of one teacher by another to the substitution of anything like a hardware or software. So that the substitution of what appears to be a figure-head may well prove to be the substitution of even new organisations.

(b) Alteration : Miles, M.B. (1966) has collected a big compendium of studies to exemplify the effects of this particular type of changes. Here he considered alterations in existing structures instead of introducing totally new for instance using 16 m.m. silent film in the place of 8 m.m. film.

(c) Addition : This category is just adding without changing old elements for instance using a diagnostic test to identify the pupils' problems without changing the style of teaching or such other factors.

(d) Restructuring : A fourth category suggested by Havelock (1969) was restructuring which may be a question of the material re-arrangement of work-space so that teaching to smaller groups is made possible; or it may be a thorough revision of interpersonal relations within the school by the development of an increased number of staff seminar groups to discuss and ventilate educational policies.

(e) Elimination of old behavioural patterns : An example of this type could be something like total elimination of a lecture method in the class and resorting to small group seminar method. This might appear as over simplification of the situation but what is so far learnt about inter-personal relationship and group dynamics does not suggest whether the group operation could eliminate mutual distrust or increase it. But it certainly does pose certain problems of personality integration leading to personality thereby.

(f) Reinforcing of old behaviour : Most of the refresher courses for teachers are basically of this type. In the main, such courses possess sufficient basic 'KNOWN' material to reinforce what the teacher feels he already knows.

1.14 FACTORS AFFECTING THE PROCESS OF CHANGE :

(or) CAUSES FOR THE SLOW CHANGE OF SCHOOLS :

Some of the behavioural scientists who have applied systems theory to educational institutions, claim that schools are by nature stable or homeostatic and are therefore unable to innovate. According to their argument, there are certain genotypical and phenotypical characteristics that inhibit change.

Havelock, R. G. (1974) divides these into THREE major types of FACTORS. They are:

- (a) 'Input' factors which inhibit change entering the school system.
- (b) 'Output' factors which prevent the very genesis of change from within.
- (c) 'Throughput' factors which limit the spread of new ideas and practices through the school system.

He further classifies these three factors into its kinds, viz.

(A) INPUT FACTORS :

- (a) Resistance to change from the environment.
- (b) Incompetence of outside agents.
- (c) Over-centralisation.
- (d) Teacher defensiveness between theory and practice.
- (e) Underdeveloped scientific basis.
- (f) Conservatism.
- (g) Professional invisibility.

(B) OUTPUT FACTORS :

- (a) Confused goals.
- (b) No rewards for innovating.
- (c) Uniformity of Approach.
- (d) School is a monopoly.
- (e) Low knowledge component.
- (f) Difficulty in diagnosing weaknesses.
- (g) Product measurement problems.
- (h) Focus on present commitments : Accountability.
- (i) Low personal development.
- (j) Lack of entrepreneurial models.
- (k) Passivity.

(C) THROUGHPUT FACTORS :

- (a) Separation of members and units.
- (b) Hierarchy and differential units.
- (c) Lack of procedure and training for change.

So far, in general and particular terms, some of the reasons why schools change so slowly were discussed under three heads, viz., input, output and throughput factors. It might be useful at this point to list some of the factors that are conducive to the successful implementation of ideas of change. Nicholls, H. (1965) in his 'consideration for creative teaching' gives the following conducive factors:

Factors conducive to successful implementation of innovation:

- (1) Teachers' being favourably disposed towards innovation.
- (2) Teachers' clear understanding of innovation.
- (3) Innovation being within Teacher-capabilities.
- (4) Provision for necessary resources resources for innovation.
- (5) Making necessary administrative and organisational arrangement.
- (6) Ability of carrying out the correct diagnosis of the pupils.
- (7) Channels of communication being used for:
 - (a) Giving information
 - (b) Seeking co-operation
 - (c) Resolving fears
 - (d) Changing attitudes.

1.15 PROCESS VARIABLES :

It is important to identify the factors or variables that operate when a given innovation is introduced in any educational system.

Clearly our understanding of the process-models of change and of strategies which eventually will emerge all depend upon the interactions of factors which are:

- (i) Inherent in the innovation itself;
- (ii) Situational or connected with the school system and its personnel; and
- (iii) environmental.

There are many more factors associated with each one of the variables:

- (A) INHERENTORINTRINSIC VARIABLES :
- (1) The proven quality of the Innovation
 - (2) Cost
 - (3) Divisibility
 - (4) Complexity
 - (5) Communicability.
- (B) SITUATIONAL VARIABLES :
- (1) Structure of the Instructional system
 - (2) Leadership and Sponsorship
 - (3) School Environment
 - (4) Group Norms
 - (5) Personal characteristics of adopters
 - (6) Rewards and Punishment.
- (C) ENVIRONMENTAL VARIABLES :
- (1) Innovation System Congruence
 - (2) Readiness

A Paradigm of variables Determining the Rate of Adoption :

(After Rogers E.M. 1962)

Variables determining the rate of adoption	Dependent variables to be explained.
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- (a) Perceived attributes of innovation.
1. Relative advantage
 2. Compatability
 3. Complexity
 4. Triability
 5. Observability.

Variables determining the rate of adoption	Dependent variables to be explained.
(B) Type of innovation decision.	Rate of Adoption of Innovations
1. Optional	
2. Collective	
3. Authority	
(C) Communication Channels (e.g. mass-media or Interpersonal).	
(D) Nature of the Social System.	
(E) Extent of Change Agents' Promotion Effort.	

1.20 RESISTANCE TO CHANGE :

Resistance to change is proportional to the amount of change required in the receiver system. Individuals tend to resist most strongly at the point where the pressures of change are greatest because they look at the change as a threat.

A resistance curve is a mirror image of the adoption curve. Havelock R.G. (1974) has expressed the theme of resistance in a formula.

Innovation = Demand minus Resistance, in which the factor of resistance, however great the demand may be, will

inevitably limit the success of innovation. The laws of supply and demand in the world of education innovation do not follow any precisely determined pattern; and resistance to innovation is certainly not always amenable to any logical or rational analysis because of the large variety of known and unknown factors operating on the resistance to typical innovations.

1.21 RESISTANCE IN PERSONALITY :

There is obvious importance to locate the mainsprings of resistance to change and we shall therefore examine briefly three 'Taxonomies' found in the literature on the process of innovation.

(i) Watson. G.'s (1973) Taxonomy of Resistance due to Personality characteristics:

1. Homeostasis : Organic desire to maintain constancy of state.
2. Habit : Preference of the familiar to the unfamiliar.
3. Primacy : Lasting effect of the first impression or the first learnt.
4. Selective Perception & Retention : Admitting only such new ideas as will fit into an established outlook.
5. Dependence : Leaning up on our peers and acceptance of similar ideas views and methods as theirs.

6. Superego : Tendency to maintain those orthodox standards absorbed in childhood from authoritarian adults.
7. Self distrust : Self doubting of ones own abilities to stop existing practices.
8. Insecurity & Regression : Faith in pursuance of fixed hopes and ambitions born out of prior practices and fear of identiniteness in the new practices.

(ii) Gusikn. A.E.'s (1974) Taxonomy of "Individual Variables in Utilisation" :

1. Sense of competence & Self-esteem : Lack of faith in self-competency and self-esteem and fear of failure.
2. Authoritarianism and dogmatism : Tendency of being dogmatic to accept without question the directives of dictatorial leaders and to rigidly reject any change emanating from outside sources.
3. Feelings of threat & fear : Tendency to preserve the self-image in terms of dogmatic consistency and self defence against all external threats to such qualities.

(iii) Harvey. O.'s (1974) Taxonomy of
"Conceptual Systems Approach".

1. Individual cognitive style congruence : Tendency of an individual to structure and restructure a given situation in order to make sense out of it in ways compatible with his own motives and subjective ends or purposes.
2. Concrete-Abstract level variability in self systems : Tendency towards extreme and more polarised evaluations such as black-white, good-bad and right-wrong.
3. High conventionality and ethnocentrism : The quality marked by structure-orientendness, low flexibility, high punitiveness and low diversity of activities.

1.22 RESISTANCE IN ACTION :

Having analysed resistance in personality in some detail, two examples of resistance in action may be considered from the study of Rogers. E. and Eichholz. G. (1964) on an attitude survey of resistance to new educational media.

1. Rejection through ignorance :

An unknown unfamiliar innovation perhaps due to its sheet complexity leading to rejection.

2. Rejection through default :
Sheer negligence or ignoring the existence of new, educational media.
3. Rejection by maintaining the status quo :
Tendency for perpetual repetition of the old methods and not accepting anything new for it was not used in the past.
4. Rejection through social mores :
Overpowering tendency to fall in line with others.
5. Rejection through substitution :
Justifying old practice as an equal substitute to the new idea/practice.
6. Rejection through fulfilment :
The idea of already knowing and doing the 'best' to reject the new.
7. Rejection through experience :
Feeling born out of failure of practicing new ideas due to perhaps unduly short trial periods to make any conclusive decision about the effectiveness of an innovation.

Rogers and Eichholz, (1968) have also presented a framework for the identification of rejection responses which are tabulated in the Table No. 1.2 Here a distinction is made between a 'real' and 'stated' reasons for rejection of innovation. The framework is presented in four columns as

form of rejection, cause of rejection, state of subject and anticipated rejection responses.

1.23 CERTAIN GENERALISATIONS CONCERNING INNOVATORS :

(1) Innovators are generally young : Rogers (1968) feels that younger people are free from conditioning by traditional practices. However, Lippitt, R. (1958) finds educational innovators to be both young and old. In the opinion of Lippitt, young teachers are more potential 'innovators' while the older ones are potential 'adopters'.

(2) Innovators have relatively high social status: This applied to the education, prestige ratings and income of the innovators. Ross, D. H. (1966) from a number of studies on innovation, observes that wealth factor was the chief variable related to the adoption of innovations.

(3) Impersonal and cosmopolite sources of information : These are important to innovators. They seek information from the mass media and other impersonal sources outside their immediate social environment.

(4) Innovators are Cosmopolite : They tend to be wide travellers and to participate in matters beyond the parameters of their system. Ross (1966) found that teachers at the more innovative schools usually acquire new ideas from outside their own community.

(5) Innovators Exercise Opinion Leadership : As a result of their prior experience, innovators are in a position to influence the adoption decision of their peers.

1.30 CONSISTANCY :

When a person's behaviour does not differ from his opinions and attitudes, then such a person is consistent in his opinions, attitudes and behaviour. It is a fact that an individual strives to be consistent with his opinions and attitudes or a person knows or believes what he does. By and large, we find that related opinions and attitudes are consistent with one another, whether they are social attitudes, political attitudes or moral attitudes. For example, a man, widely travelled and with a broad and modern outlook on life, may be of the opinion and attitude that arranged marriages fare better. He, accordingly, arranges an alliance for his daughter.

1.31 INCONSISTANCY :

We find that there are exceptions to this usual consistency which exists in people. When there is a difference between a person's attitude, opinions and his actions and between what a person knows believes and what he does, then this is said to be inconsistent behaviour or inconsistency. Such inconsistencies when they exist capture the interest because they form a sharp contrast to the general consistent behaviour. (For example though a parent may be of the opinion and attitude that college education is not necessary, yet he persists in sending his daughter to a College.)

However, the inconsistencies are not accepted

psychologically as inconsistencies by the persons involved. There will be attempts made to rationalise the behaviour. A person who continues to smoke, though he knows that it is bad for his health may feel that (a) he enjoys smoking so much (b) chances of his health suffering are not serious as some would make it out (c) He can not always avoid dangerous contingency and still live (d) perhaps even if he stops smoking he will put on weight which is bad for health. So he continues to smoke and feels that he is consistent about his ideas about smoking. However, persons are not always successful in explaining away such inconsistencies.

Even attempts to achieve consistency may fail and thus the inconsistency continues to exist. When this happens, there is a psychological discomfort. Festinger (1957) can be stated as follows.

(1) The Existence of dissonance makes a person psychologically uncomfortable. To reduce this a person will be motivated to try to reduce dissonance and to achieve consonance.

(2) When dissonance is present in addition to trying to reduce it the person will actively avoid situations and information which would increase the dissonance.

1.32 COGNITIVE DISSONANCE :

According to Festinger, (1957) dissonance is the existence of non fitting relations among cognitions and is a motivating factor in it's own right. Cognition would mean knowledge, opinion or belief about the environment, about ourself or about one's behaviour. Cognitive dissonance is a condition which actively orients one towards dissonance reduction. Thus it provides a powerful motivation. This is a basic process and manifests itself in a variety of ways.

THE OCCURANCE AND PERSISTANCE OF DISSONANCE :

Why and how does dissonance ever arise ? How does it happen that persons find themselves doing things contrary to what they know or having opinions different from what they had before ? According to Festinger, (1957) this question can be discussed in two of the more common situations in which dissonance may occur.

(1) New events may happen or new information may become known to a person which appears incompatible with his existing knowledge, opinion or cognition concerning behaviour. This causes a momentary dissonance. Since a person does not have complete and perfect control over the information that reaches him and events that happens in his environment, such dissonance may easily arise. Example :-- A person plans to go for a Picnic with confidence that the weather

will be warm and sunny. However it may begin to rain just before he starts. This knowledge is dissonant with his confidence in a sunny day and his plans to go out for a sunny day.

(2) A dissonance may exist as an every day condition, since very few situations are clear cut enough, so that opinions and behaviours are not to some extent contradictory. A mid western farmer who is a republican may oppose to his party's position on farm price support or a person buying a new car may prefer the economy of one model but the design of another. When an opinion must be formed or a decision taken, some dissonance is always unavoidably created between the cognition of the action taken and those opinions or knowledge which tend to point in a different direction. Thus there are varieties of situations in which dissonance is in some way and to some extent unavoidable. But dissonance may not be a moments affair and may continue to persist. It is therefore necessary to examine how dissonance can be reduced because when dissonance occurs there will be pressures to reduce it, according to the hypothesis given previously.

1.33 DEFINITIONS OF DISSONANCE AND CONSONANCE :

The terms dissonance and consonance refer to relations which exist between 'elements'. According to Festinger (1964) these elements pertain to what has been

called cognition which refers to the things that a person knows of himself about his behaviour and about his surroundings. These elements are referred to as 'knowledge'. Some of the elements represent knowledge about oneself, what one does, what one feels, what one wants, what one is etc. other elements of knowledge concern the world in which one lives what leads to what, what things are satisfying or painful, what is important and what is not important. The term knowledge has been used to include opinions, values, beliefs attitudes which the author feels is a part of knowledge. Thus these are the elements of cognition. The elements of cognition are responsive to reality. That is, the elements of cognition correspond for the most part to what the person actually does or feels or what actually exists in the environment. The relation which exists between pairs of elements are three, that is dissonance, consonance and irrelevant relations. Two elements may have nothing to do with one another. That is one cognitive element implies nothing at all concerning some other element.

1.34 , RELEVANT RELATIONS OF DISSONANCE AND CONSONANCE :

Two elements are dissonant if for one reason or another they do not fit together. They may be inconsistent with each other or contradict each other. Culture or group standards may not fit and so on. To state it formally x and y are dissonant if follows not x from y . For

example if a person knows there are only friends in his vicinity and yet he feels afraid, there is a dissonant relation between these two cognitive elements.

Example 2. A person already in debt purchasing new car. In this case also the cognitive elements are dissonant with each other.

Dissonance between two cognitive elements rises from different sources.

- (a) Dissonance may arise from logical inconsistency
 - (b) Dissonance may arise because of cultural standards
 - (c) Dissonance may arise because one's specific opinion is sometimes included by definition in a more general opinion.
 - (d) Dissonance may arise because of past experience.
- The relations between two elements is dissonant if disregarding the others, the one does not or would not be expected to follow the other.

1.35 EXPOSURE TO INFORMATION :

Under certain conditions, people will actively seek informations. Sometimes the information sought would be catering to an interest or hobby but not related to any relevant future action. Active curiosity and sheer pleasure of acquiring information for its own sake is also one way of voluntarily seeking new information. If there is no behaviour or action relevant to a particular

area of information there will be no motivation to acquire cognition concerning this particular area of information. For example a person notices an announcement in the news paper of a lecture to be given, namely the advantages of automobiles with very high horse power engine. With reference to the above no behaviour or action will be the case if a person does not own a car and does not contemplate owning or driving one. Thus there will be no motivation from this source, because the information which this person expects from the lecture could be irrelevant to any future behaviour, resulting in absence of motivation.

If the area of information or knowledge is relevant to some possible future behaviour of a person, then one can expect considerable motivation to acquire cognitive elements in this area, as well as active seeking out of such information in this area. With reference to the example a person, who is contemplating the purchase of an automobile in near future but has not decided as to which kind of car he would like to purchase, such a person would be motivated to attend the lecture, since the information he would acquire would be relevant to his behaviour.

1.36 PRESENCE OF DISSONANCE :

The presence or absence of dissonance in some particular knowledge area will have an important effect on the degree of information seeking and on the selectivity

of such information. If dissonance exists between two cognitive elements or between two clusters of cognitive elements may be reduced by adding new cognitive elements which produce new consonant relationship. This would be seeking out that information which might reduce the dissonance. The degree to which this kind of behaviour manifests itself would depend upon the magnitude of the dissonance which exists and also the type of comfort that any information would yield. There are several possibilities where this type of dissonance regarding information exists. Relative absence of dissonance will result in lack of motivation to seek out or avoid any particular source of information.

The presence of moderate amounts of dissonance:-
The existence of appreciable dissonance, and the consequent pressure to reduce it will lead to the seeking out of information which will introduce consonance and avoiding information which will increase dissonance. When a person is faced with the potential source of information he does not know the exact nature of what he would acquire from exposure to this knowledge. If he is lead to expect cognition which will increase consonance, he will actively expose himself to the source. If on the other hand he is lead to expect that this source of information will increase dissonance, he will avoid it.

(3) The presence of extremely large amount of dissonance.

There is a limit to the magnitude of dissonance

which can exist in a system. If two cognitive elements exist in a dissonant relationship the maximum magnitude this dissonance can have is equal to the resistance to change of the less resistant of the element of the pair. If the dissonance becomes greater than the resistance to change, then the least resistant element of cognition will be changed, thus reducing the dissonance. When this happens, a person may expose himself to dissonance increasing information till it comes to a point when it is greater than the resistance to change. He will then change the cognitive elements involved by reducing or eliminating the dissonance.

With reference to the example quoted previously, suppose a person who has bought a low power car and since then is exposed to cognitive elements which are dissonant with the cognition corresponding to owning or driving such a car, the resistance of getting rid of the car and purchasing a different one which will involve financial loss and loss of public opinion will increase his dissonance to a magnitude where he thinks of change. Such a person will act to increase his dissonance. He may bring himself to change, thus eliminating all dissonance in the system at once.

1.40 PERSONALITY DIFFERENCES :

Personality is the dynamic organisation of traits within the self that determine the individual's unique way

of playing his social roles. (Allport 1937)

A person's traits which are measurable, make up his temperament which characteristic his personality. Young or old rich or poor, those who are stable optimistic self confident and well organised have few conflicts. Those who were pacimistic and disorganised have the most conflicts.

All the traits are indeed part of personality. Self concept is expressed through the specifics of behaviour that we call traits or habits. In born temperamental traits are fundamental to the development of psychological individuality. (Thomas et.al 1963)

Miller (1967) pointed out the forces such as peer social relationships, teacher principal relationship, Norms and standards for professional behaviour and the organisational climate of the school appear to be very relevant.

There are individual difference among people in the degree to which and in the manner they react to the existance of dissonance. To some people dissonance is an extremely painful and intolerable thing while there are others who seem to be able to tolerate a large amount of dissonance. This difference can be measured atleast roughly. Persons with low tolerance for dissonance should show more discomfort in the presence of dissonance and will make efforts to reduce dissonance than persons who have high

tolerance. Persons with low tolerance would have less dissonance at any time and are definite in their opinions.

People with low tolerance will hold extreme opinions. That is opinions where dissonance is effectively eliminated. Let us consider a person at the extreme end of the range of tolerance of dissonance. Such a person may have learnt during the course of existence, how unpleasant dissonance is. He may very likely avoid those situations, which he has learnt may lead to dissonance. Example :- He would have experienced the unpleasantness that exists following a decision. Such a person tries to avoid making decisions or even becomes incapable of making decisions. Such a person has a very one sided and positive opinion about many issues and does not see both sides of the question. It is not possible to avoid dissonance in all situations. Sometimes people discuss things and have disagreement. Such a person reacts very vigorously to the expression of disagreement with others. He argues vigorously, he is dogmatic and stubborn. This is an extreme case and there are other milder ways to avoid dissonance. People assume a passive role and decisions are made without their being involved. Therefore there is a problem of variability from person to person in the effectiveness of the techniques they use for reducing dissonance and in the liking or preference of one technique or another.

1.41 THE ROLE OF SOCIAL SUPPORT :

The social group is the major source of cognitive dissonance for the individual and is also major vehicle for eliminating and reducing the dissonance which may exist in him. The existence of disagreement among members of a group on some issue or opinion if perceived by the members, produces cognitive dissonance. The cognitive elements corresponding to some opinion the person holds would be dissonant with knowing that another person holds a contrary opinion.

If a person looks at a plot of grass and sees that it is green and another person claims that it is brown, though he is not colour blind, then the knowledge for the first person becomes dissonant.

If a person is convinced that cold northern winters are healthful and invigorating these cognitive elements are dissonant with knowing that some one else thinks that these northern winters simply unlivable.

The factors affecting the magnitude of Dissonance :

The same variables hold good here. But to be more specific, the total dissonance introduced into a person's cognition by the knowledge that there some one holds a contrary opinion will depend upon how many existing cognitions are consonant with the cognitive

elements corresponding to the opinion in question. The larger the number of consonant relations involving disopinion, the less will be the magnitude of the dissonance introduced by this disagreement. Thus two major variables which affect the magnitude of dissonance will be to the extent that objective non-social cognitive element exists which are consonant with the given opinion, belief or knowledge, the expression of disagreement, will produce a lesser magnitude of dissonance. Thus, where the content of opinion concerns 'testable physical reality', there will be little dissonance created by social disagreement.

Example :- If a person believes that glass is fragile, there are so many cognitive elements acquired experimentally which are consonant with this belief. There will be very little dissonance, if somebody holds a contrary view. On the other hand if a person believes a re-incarnation, there are very few cognitive elements corresponding to physical reality which are consonant with this belief and the expression of contrary opinion will introduce a greater dissonance in his cognition.

The larger the number of people that one knows already agree with the given opinion which he holds, the less will be the magnitude of dissonance introduced by some other persons expression of disagreement. The more people

agree with an opinion the more cognitive elements there are which are consonant with the opinion. If therefore, one member in a group disagrees with the person's opinion while several agree, the magnitude of total dissonance created for the person will be less if only the disagreement existed. The magnitude of dissonance will also depend on the importance of the cognitive elements involved in the dissonance.

The more important the element, the greater will be the magnitude of dissonance. The other variable is the relevance of the disagreeing person or the group in which the disagreement is voiced to the opinion at issue. The more relevant the person or group to the opinion, the more important will be the cognitive element, corresponding to the knowledge about the opinion of the others and the greater will be the dissonance set up by the expression of disagreement. If the disagreement is voiced by an expert or very knowledgeable person the dissonance between the knowledge of his contrary opinion and one's own opinion will be greater. Also if the opinion on which disagreement is voiced is specially important to the group, the dissonance will be greater.

The other variable which will affect the importance of the cognitive elements and hence the magnitude of the dissonance is the attractiveness of the person voicing the disagreement or the group within which it is voiced. It is then called cohesiveness (sum total of attraction) which keep the group together. The dissonance between one's own opinion

and knowledge of a contrary opinion voiced by some other person is greater if the other person is important to one in some sense or if the group is important or attractive. One other factor affecting the magnitude of dissonance is the extent of the disagreement itself.

Example :- A person is convinced that strict discipline and harsh punishment are necessary for any infraction of rules, among juvenile delinquency. If a friend of his, voices the opinion that discipline must be reasonable and punishment must be mild, then some dissonance will be much greater if the friend had voiced the opinion that the only way to deal with them was to shower them with love and kindness. We are dealing with dissonance between clusters of cognitive elements here. The larger the number of dissonant relations between the elements in the two clusters the greater will be the total dissonance.

The third study of reactions to involuntary expositure is concerned with forgetting the dissonance producing information. Another way to reduce some newly introduced dissonance is to forget the information to which one was forcibly exposed. This is not an easy thing to do, since the dissonance producing information is likely to be important for the person because of the very fact that it does introduce dissonance. But if the exposition to the new information is brief and if there are no other reminders of this information in the daily experiences of the subject

then there will be selective forgetting.

It is very difficult to change an opinion if it is consonant with existing behaviour or attitudes and opinions. We must therefore ask ourselves about the circumstances under which such change of opinion would occur in the light of the dissonance theory.

The avoidance and evasion of material which produce or increase dissonance depends on the anticipation about the material or assessment of the material. If the situation is created where the anticipation or assessment of information indicate the reduction of dissonance while the material itself actually increase dissonance, one could expect to obtain a more intensifying dissonance. Given the successful introduction of dissonance with existing opinions one could expect to observe more change of opinion. That is for some persons, the dissonance thus introduced would be reduced by changing parts of the existing opinion system.

How may the designed situation be produced creating resistance to the change of behaviour? The subject believing that one side of the game was more advantageous than the other made the choice as to which side he wants to play. It is difficult for the subject to admit later on that he was wrong and consequently it was difficult for him to change. To add to this difficulty such change would cost him a dollar.

1.42 PRODUCING COGNITION CONSONANCE OR DISSONANCE
WITH KNOWLEDGE OF HIS BEHAVIOUR :

The behaviour in question here was continuing to play on the side of the game which he initially choose. By the 12th trial there was a large number of losses and gains. Subjects who had been winning a lot had experiences impinging their cognition which tell them that their side is a better side. On the other hand, subjects who had been loosing often had acquired a lot of information about the game which is dissonant with the knowledge that they continue to play on the side originally choosen. The person's relevant cognition was dissonant with his knowledge about his behaviour.

1.50 CONSEQUENCIES OF DECISION :

A great deal of attention has been paid to decision making process. When a decision is made, problems arise. One of the major consequence of having made a decision is the existence of dissonance. Adams points out that after the decision is made, the unpleasantness of having rejected something is there, and this must be handled. The so called freezing effect of decision is advocated. This is the process of establishing cognitive elements consonant with the decision and eliminating dissonant elements. The end result would be that having made the decision and the consequent action taken, one would begin to alter the cognition so that alternatives

which previously had been attractive ceased to be so. The alternative which has been chosen would seem much more attractive and the rejected alternative would seem less attractive than it had been. The result of this process would be to stabilise or freeze the decision.

1.51 DECISIONS RESULTING IN DISSONANCE :

To understand why and when dissonance follows from a decision, one type of decision situation can be analysed. Imagine a person having to choose between two alternatives both of which are attractive to him. Before the decision is made, he studies and compares the alternatives. Thus for example, a person might have to make a choice between two new desirable jobs A and B. Before the decision is made he acquaints himself with the details of these jobs. A situation then arises where, in his cognition, a number of elements considered above would lead him to choose the job A and also the number of elements that considered by themselves would lead him to choose the job B. Finally he makes the decision. He chooses one and rejects the other. He chooses the job A and rejects the job B. All of those cognitive elements, that considered 'alone' would lead him to choose the job A, are now consonant with the cognitive elements corresponding to the action he took. But there also exists a number of elements that considered by themselves would lead him to choose job B. All these elements are now dissonant ^{with} the cognition about

the action he took. Dissonance, then will be the result of the simple act of having made a decision, the magnitude of dissonance which follows the decision and of the specific manifestations of the pressure to reduce it. There are other types of decision situations.

1. Decision between completely negative choices :

This situation rarely occurs. Theoretically it is a possible situation. Two negative alternatives do not put the person in a decision situation unless there are other factors which force him to choose between them. If this occurs the same consequences concerning dissonance will exist after the choice has been made.

2. Decision between two alternatives each having both positive and negative aspects :

This is the most common type of decision situation. When a decision is taken dissonance will result. There will be some cognitive elements corresponding to the positive aspects of the unchosen or rejected alternative and some elements corresponding to the negative aspects of the chosen alternative which will be dissonant with the cognition of having chosen one particular alternative.

3. Decision involving more than two alternatives :

Many decisions involve more than two alternatives. Many possibilities may be present and the person in the decision situation may invent compromises, new modes of action etc. This makes the decision process complete, after

the decision is made. Once again all those elements that considered alone would lead to a course of action other than one taken are dissonant with the cognitive elements corresponding to the action taken. We can generalise that dissonance is an almost inevitable consequence of decision. The magnitude of this dissonance will differ.

1. The effectiveness of efforts to reduce dissonance will depend upon the resistance to change of the cognitive elements involved in the dissonance and on the availability of information or other persons who will provide or supply new cognitive elements which will be consonant with the existing cognition.

2. The major sources of resistance to change for a cognitive element are the responsiveness of such cognitive elements to reality and the extent to which an element exists in consonant relations with many other elements.

3. The maximum dissonances which can exist between two elements is equal to the resistance to change of the less resistant to two elements. If the dissonance exceeds this magnitude the less resistant cognitive element will be changed, thus reducing the dissonance.

1.52 THE SCOPE OF THE THEORY OF DISSONANCE :

Festinger (1957) in his book "The Theory of Cognitive Dissonance" has presented data from a wide range of content

relevant to the theory of dissonance. The material dealt with ranges all the way from the situation in which the individual finds himself of having made a decision to one concern involving masses. According to him the theory of dissonance does seem to have a wide scope. The existence of dissonance is probably so prevalent and various circumstances which can give rise to dissonance, probably occurs so frequently that evidence of dissonance and manifestation of the pressure to reduce it are likely to be found in almost any context. It is to be expected that appropriate modification of behaviour would be a frequent reaction to the existence of dissonance.

Dissonance itself can be considered as motivating factor but there are many other motives which affect human beings and these have no relationship between motivation and pressure to reduce dissonance. There are however in certain cases clear relationships, such instances where motives define whether two cognitive elements are dissonant or consonant. Other motives may also operate as they make certain cognitive elements resistant to change, thus perhaps hindering the reduction of dissonance.

Dissonance is not something which exists all by itself. It is a characteristic^a of a relationship between cognitive elements, thus determining whether or not dissonance exist should take the form of first specifying the cognitive elements or clusters which are under consideration and then examining whether considering either one alone the obverse

of other follows. If it seems plausible to assert that the relation is dissonant, it is usually helpful to specify on what grounds-logical, experimental, cultural or otherwise the "follows from" holds in that instance. It is also clearly necessary to be able to specify what specific changes in cognition or what new cognitive elements would reduce the magnitude of dissonance thus determined.

If treated previously and specifically as possible, Festinger (1957) believes that the theory of cognitive dissonance will prove an useful explanatory and predictive device.

1.53 DISSONANCE :

Human behaviour is subject to change. This change occurs when there is an imbalance or disharmony in the individuals mind which motivates or causes him to change his behaviour. This change in behaviour to bring about certain harmony, balance or equilibrium in the individuals' state of mind is called dissonance reduction. We can define dissonance therefore as a disharmony in the individuals state of mind which makes him change his behaviour so that his attitude and action are not in the state of equilibrium or harmony.

FESTINGER'S DISSONANCE THEORY :

Recent field investigations under controlled conditions seem to provide some evidence of the distinction between

"persuasion is a source of communication with an intent to induce attitude change in a desired direction".

The meaning given by Rogers (1962) is that persuasion is equivalent to attitude formation and change on the part of the receiver but not necessary in the direction intended by some particular source such as a change agent. According to him persuasion is receiving-oriented rather than source-oriented. Therefore, according to Rogers (1962) the persuasion function in the innovation decision process made the individual form favourable or unfavourable attitude towards an innovation.

The mental activity of this function is affective (feeling). Thus unless the individual knows about the new idea, he cannot form an attitude towards it. At this stage the individual becomes psychologically involved and actively seeks information about the innovation. Where he seeks the information, what messages he receives and how he interprets the information received, will depend upon the individual's personality as well as the norms of his social system. Therefore, there is a selective perception in determining the receiver's communication behaviour at the attitude function stage. This again illustrates the dissonance factor at work in the individual's mind and the change in behaviour reduces dissonance when it occurs.

It is at the persuasion stage that a general perception of the innovation is developed. The attributes

of an innovation such as its relative advantage, compatibility and complexity are especially important at this stage.

All innovations carry some degree of risk to the individual because he is not sure of the results of the innovation. He therefore, feels the need for the reinforcement of his attitudes towards innovation. He, therefore, seeks that he is in the way of thinking from his peers by means of communication channels. However, mass media messages are too general to be specific in purpose, the individuals need and believes about the innovation and the peers that he seeks out for reinforcement are likely to be similar to his characteristics. Thus we see at the persuasion stage that the individual seeks to reduce the dissonance in his mind at every stage by a process of dissonance-reduction.

ATTITUDE :

There are two levels of attitudes.

- 1) A specific attitude towards innovation.
- 2) General attitude towards change.

The specific attitude is the main concern at the persuasion stage. It consists essentially of a favourable or unfavourable belief in the usefulness of new idea. The specific attitude has a carry out effect from one innovation to another. A previous positive experience with the adoption of innovation creates favourable attitudes to change. This

makes easy the development of the favourable evaluation of the next innovation considered by the individual. On the other hand, a negative experience from an innovation, which is considered as a failure leads to resistance or dissonance to the future new ideas and change. Agents should therefore, begin their activity with an innovation that possesses a high degree of advantage, that is, consistent with existent beliefs and has a very high likelihood of success. This creates a general positive attitude towards change and makes the way easy for later ideas to be introduced. Therefore, the change agent should develop a positive general attitude towards change on the part of the clients. Individuals in such oriented system are self-activating, self-renewing and open to the new and active in enquiring about innovation.

1.56 ATTITUDE BEHAVIOUR CONSISTENCY :

The persuasion function in the decision process results either in a favourable or unfavourable attitude towards the innovation. It is assumed that the persuasion function will lead to a subsequent change in the behaviour (adoption or rejection) consistent with the attitude held. But there is little evidence that attitude and overt behaviour are always consistent thereby creating dissonance and there are many cases in which the attitudes and actions are contrary as a result of dissonance.

TABLE: 1-1

FOUR DISSONANT-CONSONANT TYPES ON THE BASIS
OF INDIVIDUAL ATTITUDES TOWARD AN INNOVATION
AND THEIR BEHAVIOUR

<u>MEMBER'S</u> <u>ATTITUDE TOWARD</u> <u>THE INNOVATION</u>	<u>INNOVATION BEHAVIOUR</u>	
	<u>REJECTION</u>	<u>ADOPTION</u>
UNFAVOURABLE	I CONSONANT REJECTOR	← II DISSONANT ADOPTER
	↑	↓
FAVOURABLE	III DISSONANT REJECTOR	→ IV CONSONANT ADOPTER

1.60 INNOVATION - ATTITUDE - BEHAVIOUR DISSONANCE :

Innovation Attitude-Behaviour Dissonance consists of changing behaviour so that attitudes and actions are not in line. Individual's position in the matter of attitude to innovation was not matching with innovation-behaviour. Such instances were considered to be causes of dissonance.

T A B L E : 1

Four Dissonant-Consonant Types on the Basis of Individual Attitudes Toward Innovation and Innovation Behaviour is shown in the opposite page.

1.61 INNOVATION BEHAVIOUR - CONFIRMATION DISSONANCE :

During the confirmation stage the individual wants supportive message that will prevent dissonance from occurring. Innovation Behaviour of an individual is not in line with confirmed innovation behaviour, and was not matching with confirmed innovation behaviour, such instances were considered to be causes of dissonance.

T A B L E : 2

Four Dissonant-Consonant Types on the Basis of Individual's Innovation Behaviour and Confirmed Innovation Behaviour is shown in the opposite side.

TABLE: 1.2FOUR DISSONANT - CONSONANT TYPES ON THE BASIS OF INNOVATION BEHAVIOUR & CONFIRMATION BEHAVIOUR

	<u>MEMBER'S INNOVATION BEHAVIOURS</u>		<u>CONFIRMED BEHAVIOUR</u>	
		<u>REJECTION</u>	<u>ADOPTION</u>	
<i>UNFAVOURABLE</i>	<i>I CONSONANT REJECTOR</i>	←	<i>II DISSONANT ADOPTER</i>	
		↑		↓
<i>FAVOURABLE</i>	<i>III DISSONANT REJECTOR</i>	→	<i>IV CONSONANT ADOPTER</i>	

TABLE: 1.3

FOUR DISSONANT - CONSONANT TYPES ON THE BASIS
OF CONFIRMED BEHAVIOUR & INDIVIDUAL'S ATTITUDE
TOWARD INNOVATION

	<u>CONFIRMED</u> <u>BEHAVIOUR</u>	<u>MEMBER'S ATTITUDE TOWARD</u> <u>INNOVATION</u>	
		<u>REJECTION</u>	<u>ADOPTION</u>
UNFAVOURABLE	I CONSONANT REJECTOR	←	II DISSONANT ADOPTER
	↑		↓
FAVOURABLE	III DISSONANT REJECTOR	→	IV CONSONANT ADOPTER

1.62 INNOVATION ATTITUDE-CONFIRMATION-DISSONANCE :

The confirmation stage continues after the decision to adopt or reject the innovation for an indefinite period in time throughout the confirmation function, the individual seeks to avoid a state of dissonance (or) to reduce it if it occurs. Individual's attitude to Innovation was not mating with confirmed behaviour.

T A B L E : 3

Four Dissonant-Consonant Types on the Basis of Individuals Attitudes Toward Innovation and Confirmed Behaviour is shown in the opposite Page.

1.63 AUTHORITY DECISION :

To illustrate this, behavioural discrepancy or Dissonance in a system or organisation is illustrated.

The actual use of the innovation by the adoption unit (organisation etc.) is known as the authority decision. This may be the final step in the authority innovation-decision process. Behavioural results of an innovation becomes clear at the action stage when the innovation is adopted or rejected at the action stage. Thus the innovation is either rewarding or disappointing.

TABLE: 1.4

FOUR DISSONANT - CONSONANT TYPES ON THE BASIS
OF INDIVIDUAL ATTITUDES TOWARD AN INNOVATION
AND THE OVERT BEHAVIOUR DEMANDED BY THE ORGANIZATION

<u>MEMBERS'</u> <u>ATTITUDE TOWARD</u> <u>THE INNOVATION</u>	<u>OVERT BEHAVIOUR DEMANDED</u> <u>BY THE FORMAL ORGANIZATION</u>	
	<u>REJECTION</u>	<u>ADOPTION</u>
UNFAVOURABLE	I CONSONANT REJECTOR	← II DISSONANT ADOPTER
	↑	↓
FAVOURABLE	III DISSONANT REJECTOR	→ IV CONSONANT ADOPTER

As quoted by Rogers (1962) for example in Adam's high school, the Audio-Visual equipment was stored in the basement. This equipment though ordered to be made full use of by the principal, was not accepted by the teachers. This shows the attitudinal discrepancy of the teachers because they adopted a negative attitude towards the use of the Audio-Visual materials in contrast to the Principal's order to adopt the use of these materials. Thus the teachers are exposed to the dissonant situation. This behavioural discrepancy is known as the Innovation-Dissonance.

Innovation-Dissonance in a formal Organisation or an institution is the discrepancy between the individuals attitude towards the innovation and the action demanded by the authority. The table No. 104 on the other side given by Rogers' illustrates the points in view. Type I and IV in the table are consonant because the individual's attitude agrees or is in equilibrium with this behaviour. Types I and III, however, lead to cognitive dissonance (Festinger 1957) because the individual's attitude towards innovation is not in accordance or is in disequilibrium with his behaviour in the organisation.

The tension so produced can in the course of time either change the Member's attitude to make them consonant with the behaviour required by the Organization or to reject, discontinue, misuse or use the order in such a way that their

behaviour becomes consonant with their attitude.

GENERALISATION :

When an individual's attitudes are dissonant with the overt behaviour demanded by the organisation, the individual will attempt to reduce the dissonance by changing either his attitude or his behaviour.

To test his dissonance hypothesis, data is needed on the individual member's attitude towards innovations and on authority decision over a period of time. The balance theory suggests that the individual will try to resolve imbalance in his cognitive system by taking that alternative which is easy for him to achieve.

In formal organisation, the individual will change his attitude in course of time to conform to his public behaviour though it may not change his organisational behaviour. On the other hand, the individual may find ways to get round the order of the authority and thus getting rid of the dissonance by making his behaviour conform to his private attitudes. There are also other ways of getting rid of dissonance by resigning of job, living with dissonance factor or ignoring the dissonance. This however, is rare. When studying the authority innovation-decisions it is found that attitude towards innovation is a more suitable dependent variable for study, then the behaviour or the actual use of innovation, Lin (1966).

This is because the external behaviour can be manipulated by the Organisation for a short time. But over a long period of time, the members' attitudes affect continued adoption or discontinuance.

Panchal (1977) in his study of Innovation Proneness of teacher educators has pointed out the attitude-behaviour discrepancy prevailing among the Teachers in the context of innovations. This should be located and efforts should be made in schools to wipe out these factors responsible for innovation dissonance. This discrepancy is known as the 'Innovation Dissonance'. The Individual and Organisational factors responsible for this innovation dissonance should be located and reduced.

1.70 THE PRESENT STUDY :

In the present study, a particular focus of interest is the study of Innovation Dissonance among Secondary School Teachers of Madras City. For the purpose, of the present investigation, an innovation is taken to mean a significant change in educational objectives, curriculum content, teaching methods, pupil grouping, staff deployment, resource utilization or school organisation.

According to Festinger (1964) the attitude towards an innovation of an individual did not always lead to behavioural change. Certain percentage of the teachers in

their behaviour have a consistent attitude towards innovation and certain percentage of the teachers may not be consistent in their behaviour. This attitude behaviour discrepancy may result in a form of Cognitive dissonance which has been termed as "innovation dissonance". Festinger's (1957) dissonance theory and Heider's (1958) balance theory say that the attitude-behaviour discrepancy of an individual may be resolved by various dissonance reducing mechanisms, depending upon the individual's latitude of tension tolerance.

To locate teachers' adoption of innovation and thereby their specific attitude and behaviour, the investigator has used the adapted version of the scale, prepared and standardized by Panchal (1977) containing three sections. Section I is the Inventory of Attitudes to Innovation, Section II contains the situational Characteristics scale and the Innovation Characteristics Scale and Section III is the change Related Values Questionnaire.

The components of "The Inventory of Attitudes to Innovation" (Section I) are :

(1) Individualization (2) Curriculum Organisation (3) Teaching-Learning Process (4) Teaching Resources (5) Internal School Organisation (6) Staff Development and (7) School Community Relationship.

The components of "The Situational Characteristic Scale" (Section IIA) are

- (1) Administrative support, Staff Norms and System Norms.

The components of "The Innovation Characteristics Scale" (Section IIB) are

- (1) Complexity (2) Compatibility (3) Riskness
- (4) Localiteness (5) Cosmopolitaness.

The components of "The Change Related Values questionnaire (Section III) contains

- (1) Traditionalism (2) Progressivism (3) Dogmatism
- (4) Venturesomeness (5) Conservatism and
- (6) Change Proneness.

"The Inventory of Attitudes to Innovation" (I.A.I) is the first scale used to measure the teacher's state of mind to adopt educational innovations.

For the successful adoption of Innovations, Research on the determinants and correlates of teacher "Innovativeness" suggests that there are three major sets of variables (1) Situational Variables (2) Characteristics of the innovation and (3) Personal variables. The dissonance state of the teachers would be significantly influenced by these variables. The investigator has used two scales (viz) (1) The Situational Characteristics Scale (S.C.S.),

and (2) The innovation characteristics scale (I.C.S.), and for personal variables the investigator has designed separate personal data sheet attached at the beginning of the questionnaire, which includes professional training, participation in Inservice Education, reading of Professional research literature Mobility and Professional job satisfaction.

Several studies have examined relationship between teacher innovativeness and situational variables such as 'organisational climate' (Halpin and Croft (1962), 'Organisational Character' (Miner, 1965), 'Organisational Health (Miles, 1964), 'Group Conformity' (Warren, 1948), Blan and Scott, 1962, Pallegrim-1966), 'Supportive Climate (Fox and Lippitt, 1964) Watson, 1967, Sicher, 1968, Bhola, 1965) 'Peer Community Support' (Parker, 1970), 'Perception of Administrative Support' (Gorss et al 1971).

For successful adoption, Shipman (1972) stresses the importance of supportive climate.

The investigator has used adapted version of the scale (Panchal 1977) for locating the dissonance state.

1.71 ORGANIZATIONAL CLIMATE :

The climate of an institution can be felt and can be measured. Popularly the synonyms for institutional climate that are used in the current literature in this

area 'feel', 'personality', 'individuality' and the 'inner life' of the institution, some of which had already been referred to in the previous section. The nature of the constituents of the institutional climate differs from institution to institution.

The main constituents of the climate of the school, according to Halpin and Croft (1963), are principal's behaviour and the teachers' behaviour which filter down to the behaviour of the students. The behaviour of the students and the tone of discipline in the students also play a significant role in building the climate of the school.

Organisational climate of an institution shows the pattern of social interaction that takes place within the school family. The main units of inter-action are individuals constituting the community in the institution, the group as a whole and the leader. Halpin and Croft (1963) have developed instrument and procedures of measurement of climate which they focus on interactional process to describe it as the one that takes place between the leader (Principal) and the group (teachers). It is the nature, extent and quality of this interaction that creates a climate in the institution which either facilitates or hinders the attainment of its goals through its programmes. The interaction that takes place in a school is within its physical, sociological and managerial frame-work. The growing literature in this area shows that there are several possible variables

contributing to the school climate such as the objectives of the school, the past traditions or ethos established in the school, the nature, purpose and interest of the management committee, character, abilities and attitude of the leader, the teachers that compose the staff, the financial condition of the school, the nearness or the distance of the local community from the school, the physical plant of the school, its location and environment, etc. which affect the climate of the school.

Halpin (1966) has taken the climate as the starting point and has shown the impact on principals, teachers and the students. In the school with inspiring climate, teachers and principal are zestful, enthusiastic and confident. They work with great pleasure and this pleasure is shared by the students, too. Pleasing atmosphere inspires students to achieve higher target of their achievement. Poor leadership of the school principal gets transmitted to the students who, in their own frustration gives a negative feed-back to the teachers who also become disheartened and frustrated. In some schools, the behaviour of the principal, teachers and the students is quite different. They are all busy with the matters of their own interests. The school works, but then the machinery goes out of gear in such a school. This means poor coordination in the working of the school. Halpin thus initiated a new thinking by giving a new perspective on school climate.

Nelson (1960) has classified the organizational climate into four types, viz.

(i) the bureaucratic, (ii) the autocratic
(iii) idiocratic and (iv) democratic. However, Halpin and Croft have identified in the research referred to earlier, six categories of climate with 'openness' at one end of the continuum and 'the closedness' at the other end. The climate types are shown in the opposite page.

Climate is an important factor for adoption of innovation, therefore, to locate the dissonance state climate is taken as one of the variables.

1.72 LEADERSHIP BEHAVIOUR :

According to Lipham (1964), the leader is a change-agent who initiates change in the institution and the administrator is a stabilizing force looking after maintaining or running the machinery. This view is also debated. An administrator may not be merely a maintaining agent; he can introduce changes too. Similarly, a leader may not always facilitate changes, he can prevent changes too. Thus, a good leader, may be a good administrator and vice-versa.

To an inquisitive headmaster

G.A. Steiner's (1957) description of a creative institution might mean much. He says that a creative organization has

(i) idea men, (ii) open channels of communication,
(iii) decentralised and diversified processes, (iv) a variety

of contacts with outside sources, (v) heterogenous type of staff employed, (vi) an objective and fact finding an approach to matters and (vii) the habit of exploring new ideas on their merit.

Now according to the National Education Association (the NEA) (1960), leadership is defined as that action or behaviour among individuals and groups to move towards educational goals that are increasingly mutually acceptable to them. Tannenbaum, Weschler, and Nassarik (1961) define leadership as interpersonal influence exercised in situation and directed, through the communication process, toward the attainment of a specific goal or goals. Here, in these definitions, the essential thing is that the leader is the one who influences the others to achieve given objectives in a given situation. The followers may be peers, subordinates or superordinates.

Leadership is influence, a positive influence act, directing a group and making difference among groups. Gurnee (1936), and Lapiere and Fransworth (1949) defined leaders as agents to change, as persons whose acts affect other people more than other people affect them.

According to Culbertson (1963), effective leadership involves responsibility and authority and the main leadership acts are planning, initiating, managing, delegating, coordinating, decision making, communicating and evaluating. In solving any particular problem, a

principal might use one or several of these acts of leadership.

Hemphill (1964) makes useful and important distinction between behaviour of an administrator, an administrative behaviour and leadership behaviour. The first category is global, incorporating all the acts performed on the job and off the job by the administrator. This category is too broad to explain. The other two deserve elucidation. Leadership involves among other dimensions, initiation of procedure or creation of structure to achieve or to change the goals of an organization.

The functions of a leader that have been identified by Mackenzie and Corey (1954) are summarized as :

- (i) cooperating in the identification of common goals;
- (ii) motivating individual, making decision, taking action, and evaluating the work of the group;
- (iii) developing favourable and healthy climate for individual and group effort;
- (iv) guiding individuals and group to make them self-dependent and competent;
- (v) preparing individuals and group for immediate and long-range activities;
- (vi) becoming a friend, philosopher and guide from time to time;
- (vii) co-ordinating the efforts of others; and

(viii) carrying out effectively any responsibilities for action that have been accepted and expected of him by the group.

It is the headmaster who is all important for making the institution innovative, because as a leader himself, he has to first understand the various psycho-physical phenomena in operation so that he could solve the problems and resistance through rendering a lot of sympathy, consideration, tact and sacrifice in his approach and practice.

Leadership manifests positive sentiments towards the group-activity and towards the persons in a group. Leadership protects the standard of behaviour (norms) of the individuals in a group. Persons perceived by others as leaders are adorned with some authority to take decisions and actions for the group. The quality of an organization is often evaluated by the perceived quality of leadership. Leadership behaviour very often creates imbalance in a group with a view to moving group in a desired direction. Here, a leader employs varieties of techniques without becoming neutral.

In this study the investigator has considered the Leadership behaviour of the Principal as responsible factor for the dissonance state.

To provide a measure of the influence of situational

variables there are three sub-scales in the tool used

- (i) Teachers-Norms Subscale-Teachers' perceptions of change related norms and values of their colleagues in the institution
- (ii) Situational characteristic Subscale-Teachers' perceptions of the degree and kind of administrative support provided for innovation in the school and
- (iii) Staff Norms Subscale-Teachers' perceptions of the change related norms and values of the educational system.

Rogers (1962) identified five characteristics of an innovation which may exert a significant influence on adoption, compatibility, complexity, relative advantage, communicability and divisibility. MacDonald and Rudduck (1971) briefly explained the importance of type and complexity of Innovation.

Eicholtz and Rogers (1969) suggest that innovation varies directly with cosmopolitans. They also argue that the degree of risk involved in adopting an innovation may significantly influence teachers' innovativeness. Gouldner (1957) hypothesises, a distinction between the latent organisational identities of 'Cosmopolitans' and 'locals' as determinants of organisational behaviour. The above dimension could be used for identifying the dissonance state.

The investigator has used five sub-scales to measure what appeared to be five separate, but related dimensions of

teachers' perception of the characteristics of innovation to test a number of hypothesis suggested by the above mentioned studies.

- (1) Compatibility subscale (CP) - Teachers' perception of the innovations.
- (2) Complexity Subscale (CM) - Teachers' perception of the complexity of innovation.
- (3) Cosmopolite subscale (C) - 'Perceived cosmopolitaness of the innovation.
- (4) Localite subscale (L) - Perceived 'local' orientation of the innovation and
- (5) Risk-taking Subscale (R) - Teachers' perception of degree of risk involved in adoption.

To locate the innovation dissonance state among secondary school Teachers, three established scales were employed to examine some of these relationships.

- (1) The Traditionalism Scale (T) and
- (2) Progressivism Scale (P) - developed by Kalinger and Kaya (1959) were administered with some modifications in scoring mode and in wording.
- (3) Dogmatism - A shortened version of the

Rokeach Dogmatism Scale (1960) was devised by a random sampling of ten items from the forty items of the form 'E' scale.

Three main scales are used to elicit attitudes towards statements more overtly relating to innovation dissonance in education (IV) Venturesomeness studies by Evens (1968) and Galler (1971), Eicholtz and Rogers (1964) found significant relationship between venturesomeness and innovativeness (V) conservatism and change proneness (C.P.) - studies by Childs (1965), Galler (1971), Hilfiker (1968), Miller (1968), and Forman (1971) suggest the potential utility of measured conservatism and change proneness in predicting innovativeness.

According to Rogers (1967) "Innovation Dissonance in a formal organisation is the discrepancy between an individual's attitude toward an Innovation and the overt behaviour (adoption or rejection demanded by the decision unit).

Likert (1961) suggests that in "authoritative" organisations, downward messages are viewed with great suspicion, creating problems of misunderstanding and attitudinal rejection.

Thomas et. al (1963) points out that inborn temperamental traits are fundamental to the development

of psychological individuality.

Hence, it is clear that leadership behaviour, climate of the school and temperament of teachers are responsible for the magnitude of dissonance.

In addition to the above three tools used to measure the innovation-dissonance state of the Secondary School Teachers, the investigator has also used three tools to know about the correlates.

- (IV) Leadership behaviour description Questionnaire (LBDQ).
- (V) Organisational climate Description Questionnaire (OCDQ) and
- (VI) Thurston Temperament Schedule.

Darji (1975) in his study of "Leadership Behaviour and its Correlates" where the innovativeness of the school was taken up as one of the correlates of Leadership Behaviour, found that most of the schools having high innovativeness have principals manifesting high initiating structure and high consideration. The investigator has used OCDQ as one of the correlates to find the innovativeness in Secondary Schools. A number of researchers (Pillai, Rai, Darji etc.) used O.C.D.Q. as one of the correlates to study the Leadership Behaviour. Here the investigator used the same tool to assess the disequilibrium of mind of the teachers of Secondary Schools. It measures eight dimensions of Organizational Behaviour.

(1) Disengagement (2) Hindrance (3) Espirit
 (4) Intimacy (5) Aloofness (6) Production
 Emphasis (7) Thrust and (8) Consideration.

Though the proportion of the Scores obtained on these eight sub-tests, the Questionnaire measures six types of climate viz. (1) Open (2) Autonomous
 (3) Controlled (4) Familiar (5) Paternal and
 (6) closed. To locate the dissonance state the climate of the school is taken as one of the correlates.

Quarishi (1972) has used ("Thurstone temperament Schedule") to find the relationship between the temperament of teachers and the adoption of innovation. The Thurstone Temperament Schedule was devised to show normal well-adjusted people differ from each other. It is designed to assess those traits which are relatively permanent for each person and excludes those which rejects recent Social experience, social identifications, disturbing experiences or exposure to propoganda. Seven areas of temperament are appraised in a relatively short Questionnaire. The seven areas of temperament namely (1) Active Trait
 (2) Vigorous Trait (3) Impulsive Trait (4) Dominant Trait
 (5) Stable Trait (6) Sociable Trait and
 (7) Reflective Trait are described. The investigator is intended in finding out, which particular temperamental trait is responsible for bringing out the dissonance state.

The three correlations (1) Leadership Behaviour (2) Climate of the School (3) Temperament of Teachers, have been taken to locate the factors related to innovation dissonance state.

1.73 THE OBJECTIVE OF THE STUDY :

In this study, there is a multi-dimensional approach to study the dissonance.

- (1) To study the Innovation-dissonance among Secondary School Teachers in the city of Madras with respect to their personal variables.
- (2) To study the Innovation-Dissonance among Secondary School teachers in the city of Madras with respect to their personality variables.
- (3) To Study the Innovation-Dissonance among Secondary School teachers in the city of Madras with respect to the Institutional Variables.
- (4) To study the Innovative proneness of the teachers of Secondary Schools according to their personal variables.
- (5) To study the Innovative Proneness of the teachers of Secondary Schools with respect to the Institutional Variables.
- (6) To study the Innovative Proneness of the Secondary School teachers with respect to the Institutional Variables.

- (7) To study the Inter correlations among the components of Innovative Proneness Scale, Leadership Behaviour Descriptive Questionnaire, Organisational Climate Descriptive Questionnaire and Thurstone Temperament Schedule.

The nature of the problem is briefly discussed in this chapter. The review of researches and related literature are dealt with in the next chapter.

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CHAPTER : I

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R E F E R E N C E S

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When new information is contrary to information already held by the individual, dissonance results. This dissonance is a major source of human motivations. " Just as hunger impels a person to eat, so does dissonance impel a person to change his opinions or his behaviour". A student may have to modify his cognitive frame work in order to accept new information provided by the teacher.

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