C H A P T E R II

REVIEW OF RELATED LITERATURE AND RESEARCH

A broad perusal of the literature about change process, innovations and diffusion shows that the field is so wide that one finds a wide variety of literature in different areas like diffusion process, adoption of innovations, adaptability, change agents etc. The educational change process has been seemingly influenced considerably by studies about change in sociology, rural sociology, anthropology, industry and medical sociology. Rural sociologists have made extensive studies in the above areas with special reference to agriculture and farm practices. In this chapter, only a broad outline of the studies made by anthropologists and sociologists is mentioned, whereas the studies in the area of education have been dealt with at length.

RESEARCH IN INNOVATION IN GENERAL

Research in innovation and change is observed

in research traditions of such description as anthropology, sociology and education. The importance of such research in these fields goes well beyond the simple discovery and description of elements of a process. One striking features of the studies in the area of change in various disciplines is the commonness of the areas studied. One finds studies about innovations, their diffusion, the adoption process, the characteristics of adopters and non-adopters of innovations in the field of sociology, rural sociology, anthropology, industrial sociology, etc.

Anthropology

A study of the literature in the area of anthropology indicates that anthropologists are more concerned with the exchange of ideas between societies rather than within the society. Further, anthropologists have tended to emphasize the social consequences of innovations more than any other diffusion traditions.

The works of Kroeber (1923) and Wissler (1923) have influenced many later diffusion studies. Linton (1936) was one of the first academics to recognize that the characteristics of an innovation affect its rate of adoption.

Barnett (1953) has studied the adoption of innovation at the psychological level in six cultures

ranging from Modern American Society to Pacific Northwest Indian tribes. However, one finds a characteristic lack of utilizing the concept of the adoption process in this study.

Sociology

The pioneering work in early sociology is that of Tarde (1903). He suggests that the adoption of new ideas follows a normal S-shaped distribution overtime. This means that in the earlier stages only a few individuals adopt a new idea and then the number of individuals accepting the new ideas increases and finally the rate of adoption slackens. One of his suggestions that the extent of cosmopoliteness of innovators influences their acceptance of new ideas, has been subsequently studied by a number of researchers in the area of education. The main interest of the early sociologists has been in studying the diffusion process of only such innovations that promised to contribute to major social changes. In their studies, the sociologists considered a State, a city or a social organization as the unit rather than a single individual.

A sizable amount of work has been done in area of agriculture by rural sociologists. The remarkable work of Ryan and Gross (1943) in rural sociology on the analysis of the diffusion of Hybrid Seed corn giving

wealth of data on process of adoption by the farmers, helps in leading directly to the investigations of the correlates of innovativeness, viz. the adopter categories, the social characteristics such as age, status, cosmopoliteness of the early and late adopters, the opinion leaders and their ways of influence, their distinctive roles in the process of adoption, predicting innovativeness and information sources at different stages in the adoption process.

Lionberger (1963) has studied the change process with respect to the diffusion of farm practice by farmers. His studies are concerned with the influence of the personal characteristics of the acceptor, his social status, the membership in various types of formal locality, clique groups, group norms relative to the acceptance of changes, inherent characteristics of change itself, exposure to various types of mass media sources of farm information, the flow of information through inter-personal communicative networks, situational factors relating to the unit, and the role of change agents in the process of adoption.

In India, sociologists and specially the rural sociologists have undertaken a large number of studies in the area of diffusion of agricultural innovations amongst the farmers. These studies are reflected in the

works of Barnabas (1955), Dube (1961), Pandit (1962), Bose (1960, '61, '62, '63, '64a, '64b), Bakshi (1962), Bose and Basu (1963), Bose and Dasgupta (1962), Singh (1962), Chattopadhyaya (1963), Narayan (1963), Dasgupta (1963a, 1963b, 1965), Rahudkar (1962, 1963), Sinha (1963), Sohoni (1963), Basu (1964), Singh and Jha (1965). These studies deal with such problems as the adoption process related to socio-personal factors, characteristics of farmers, role of factors like age, education, and size of the farms, attitudes and beliefs of farmers in relation to adoption of improved farm practices, psychological correlates of adoption power, communication and diffusion process among farmers, etc. etc.

Industry

Danhof's (1949) categorization of adopters into four categories (innovators, initiators, fabians and drones) helped the other researchers in the field in determining the characteristics of industrial firms associated with innovativeness. On the basis of these categories, Carter and Williams (1957) classified 130 English firms into two categories viz. 'the most progressive' and 'the most parochial', based on their innovativeness. At the end of their study, they found a few prominent factors related to innovativeness. They are:

1. a favourable attitude toward science as evidenced by the status given to scientists in the firm,

2. cosmopoliteness as indicated by the world-wide travel of executives,

3. adequate information sources as measured by subscription to scientific journals and degree of contact with universities,

4. lack of "shop-floor resistance to innovation", as evidenced by the conservatism of firemen, etc.

Medical Sociology

The innovations studied in this tradition consisted of (1) either new drugs or techniques, where the adopters are doctors, or (2) polio vaccine, chest X-rays or other medical ideas where public is the adopter. Caplow (1952) and Caplow and Raymond's (1954) studies of the diffusion of a medical drug aimed at determining the degree of influence of opinion leaders in the diffusion of drugs among medical doctors. The results being somewhat inconclusive, do not give sufficient information. While the classic study in this tradition, much known as 'drug study' by Katz and others (1955) is quite alike Ryan and Gross hybrid seed corn analysis in so far as its contribution to the knowledge of the diffusion of new ideas is concerned.

Education

In education, about 150 studies have been

mentioned by Ross (1958) in the area of innovations and change. However, as Rogers puts,

> ...this tradition is probably of lesser significance in terms of its contribution to understanding of the diffusion of ideas. Strong intercommunication within the tradition has existed but until very recently, little attention has been paid to other diffusion traditions. (Rogers, 1962, p.39)

In the 150 studies that Ross reviewed, the unit of analysis was the school system. The central findings that have emerged from various studies may be summarized as under:

1. Typically, there is a considerable time lag between the recognition of an educational need and the adoption of an innovation to fill the need. This period is a matter of decades.

2. The diffusion of educational innovations is also measured in terms of decades. The generalized adoption of an innovation takes the shape of an S-shaped curve. This curve, which typically extends over decades, can be telescoped into a period of months under emergency conditions when there is general support from government agencies.

3. The rate of diffusion of complex innovations is similar to that of simple ones. More

costly innovations diffuse more slowly than others.

4. Innovative communities tend to be so in all areas of education.

5. Public attitudes toward education seem to lie at the core of willingness to spend more for schools and give teachers more freedom. This, in turn, contributes to innovativeness of the local schools by attracting innovative teachers.

6. Attitudes and expectations of the population concerning the schools seem to be at the core of willingness to innovate or adapt to changing conditions.

A CONVERGENCE OF TRADITIONS

When diffusion studies in the area of sociology, rural sociology and education are studied in context, one finds a trend towards a convergence of different traditions. This convergence is quite noticeable in the education traditions. Thus, Eichholz (1962) effected a convergence of the rural sociology tradition with the education tradition in his analysis of the rejection of audio-visual innovations. His unit of analysis was the teacher rather than the social system as usually found in

the "Mort Tradition". Barton's (1961) study of the diffusion of educational methods of teaching retarded children among school system is another manifestation of converging traditions.

Carlson's (1965a) work on the diffusion and adoption of team teaching, modern mathematics,accelerated programmes in secondary schools, foreign language instruction in elementary schools, language laboratories and programmed instruction, is another convergence of education and sociology. As with Eichholz and Rogers' study, Carlson's work contains a number of generalizations which seem to be applicable to rural sociological studies.

Harber's (1963) work follows a new pattern. Although he made no explicit statement as to the sociological theories that he made use of, sociological theory has evidently influenced his work. His investigation lay within this new practice of using the theories of various research traditions to study problems in education.

One has to admit still that intratradition communication of education research far excelled intertradition communication with other diffusion traditions.

CHANGE PROCESS IN EDUCATION

A perusal of literature related to change

process operating in schools in particular and education in general reveals three major concepts viz. change agent, adoption process, and school adaptability or innovativeness. Apart from these concepts the research literature is mainly concerned with studies about diffusion of innovations in schools, characteristics of innovative schools, characteristics of effective change agents, the process of adoption of innovations by teachers etc.

Change agents

Lippitt (1958) and other social psychologists with an interest in the dynamics of small groups gave popularization and meaning to the term 'change agent'. Since its first use in 1947, in the laboratory of small groups, the term has been widely used by research workers interested in innovations and the diffusion of innovations. A change agent can be defined as that person and/or agency concerned with the development, introduction and adoption of innovations. According to Rogers (1962, p.254), "he is a professional person who attempts to influence adoption decisions in a direction that he feels is desirable". The literature of rural sociology has variously called this person or agency by such names as "local influential", "opinion leader", "key influential", "adoption leader", or simply a "leader". The word refers to all acceptors including the individuals,

associations and institutions which absorb the novelty as a part of the "going concerns".

Research on innovation and the diffusion of innovation in such diverse fields as rural sociology, industrial engineering and anthropology indicates that the unit of adoption is usually the individual. In education studies, the unit of adoption is usually the school system - a system which is composed of people interacting with each other and reacting to each other.

The importance of the use of selected group processes and communication skills by change agents in personal contact situations has been demonstrated in the studies of Brodbeck (1956), Lewin (1953) and others. These studies indicate the importance of personal involvement as opposed to telling by an authority as a key variable in effecting change in human behaviour. Diffusion studies in which social systems having a hierarchy of personnel have been involved, such as those by Brickell (1961a), Farnsworth (1940) and Griffiths (1963) have found the single most influential change agent in school systems to be the legally constituted leader, i.e., the superintendent or the principal. Ebey (1940) too in his study of St.Louis found the individual building principal an important factor in conditioning adaptability.

Skogsberg (1950) while interviewing the superintendents of the most forward-looking systems to find out the emerging design of administration could state that a superintendent is in a key position to influence the development of the school due to his professional competence and ways of approaching the problems.

Ross (1958) reviewing the research studies done by different research workers on the position of local administrators, commented that unless the superintendent over and above maintaining the schools as a going concern puts into routine the seeds of creative activity, as well as improves the generalized capacity of his system to adapt, he can be said to be failing as the educational leader. Discussing this, Brickell writes,

> ...an administrator is powerful because he can marshal the necessary authority, if not the necessary leadership to precipitate a decision. He may not be and frequently is not the original source of interest in a new type of programme, but unless he gives it his attention, it will not come into being. (Brickell, 1961a, p. 23)

Carlson too, using the school superintendent as the adopting unit indicates,

> ...though it is true that a school system as a whole accepts or rejects innovation, the school superintendent is at the focal point in the decision process regarding innovations. (Carlson, 1965a, pp. 10-11)

Griffiths (1959) and Pellegrin (1966) both

indicate that major stimuli for change and innovation in education originate from external sources. As Pellegrin noted,

> ....the sources of innovation lie largely outside the local community, and in most instances outside the educational profession. Innovations are channelled into the local community from the outside, and their introduction on the local community level depends primarily upon the superintendent. (Pellegrin, 1960, p. 15)

The source of innovation may lie outside the system but inside the system, the leader is the main agent influencing change.

But what makes one person or one particular organization innovative or non-innovative? Why a particular person's receptivity to change is powerful so also what causes the particular group of individuals in an organization to accept and promulgate change? An examination of the psychological concepts for the same is required. Before discussing that, it is worthwhile to investigate into the process of adoption.

The adoption process

The adoption of a new practice by an individual, be it in education or agriculture or industry is a complex behaviour. Adoption of a new idea or a practice is not a sudden decision. It is a result of a process through which the individual passes.

Rogers (1962, p.76) has defined the adoption process as "the mental process through which an individual passes from first hearing about an innovation to final adoption". It should be noted that the adoption process is distinct from the diffusion process. The essential difference between the two processes is that the adoption process is an individual matter whereas the diffusion process occurs among persons or among social systems. The diffusion process is the spread of an idea from its creation to its ultimate users or adopters. A person adopts an innovation. An innovation spreads or diffuses among people or social system. Again, the decision to adopt or reject an innovation is a psychological one and is subject to the cultural conditions in which it is made. Rogers (1962) considers the adoption process as one type of decision-making. As with the decision-making process, it can be broken down into stages.

Ryan and Gross (1943) in their classical study of the diffusion of hybrid seed corn among 259 Iowa farmers, were among the first to recognize the existence of stages in the adoption process. They used four stages: (i) awareness, (ii) conviction, (iii) trial, (iv) acceptance and complete adoption. They made no distinction between acceptance and what was later termed as trial. However, it was Wilkening (1953) who was first

to report that adoption involves decision and that it is a process composed of stages or steps. He described the adoption of an innovation as,

> .....a process composed of learning,deciding and acting over a period of time. The adoption of a specific practice is not the result of a single decision to act but of a series of actions and thought decisions. (Wilkening, 1953, p. 9)

Wilkening used four stages: awareness,obtaining information, conviction and trial, and adoption. Later on he suggested only three stages: awareness, decision-making and action. Beal et al. (1957) and Copp et al. (1958) performed research primarily designed to determine whether the concept of a five-stage adoption process is empirically valid. Other writers Rahim (1961), Bose and Dasgupta (1962) etc. have broken up the process into fewer or more stages but there is a general agreement that the process is made up of stages.

Rogers (1962) in his study of farm innovations has given five stages of adoption process, viz., (i) awareness, (ii) interest, (iii) evaluation, (iv) trial, and (v) adoption, wherein, according to him, adoption implies continued used of the innovation in the future. Pareek (1962) after reviewing Rogers, has suggested that 'need' be added as the first stage.

The stage concept has been widely used in the

field of education for self-initiated change by practitioners, recently known as action research. Corey (1953) initiated work in this area and suggested the following stages: identification of a problem area, selection of a specific problem, formation of a hypothesis, careful recording of action taken and the accumulation of evidence, inference or generalizations, and continuous of testing of the generalizations. Pareek and Khanna (1961) reviewing the literature on action research in education, have suggested eight steps: dissatisfaction, identification of the problem area, identification of a specific problem, formulation and imaginary testing of hypotheses, choice of a hypothesis, design for the practices of the hypothesis, evaluation of efforts and generalizations. The stages that have been used in India (Pareek and Corey, 1960) are problem identification, hypothesis formulation, hypothesis testing, action procedure, and evaluation.

The various studies in the field of adoption clearly show that adoption is seldom an impulsive act, and that it consists of a series of events following through a period of time. However, disagreements remain as to the number of stages in the process, the sequence of the stages and the nomenclature of the stages.

Adaptability

The majority of education diffusion studies have been done at one institution - Teachers College, Columbia University, under the sponsorship of Paul Mort. Mort's overriding purpose was to demonstrate the significance of local control of education in influencing the adaptability of school districts in general. According to Rogers (1962, p.40), Mort has defined adaptability as, "the capacity of a school system to take on new and more appropriate educational practices and discard out-moded ones". Adaptability is thus synonymous with innovativeness and is seen as a desirable quality of schools. Mort and others were trying to show the impact of local control and local initiative in financial terms over the adaptability of schools. In order to increase the adaptability of the present school systems, they have tried their best to find out and analyze each and every variable that can be suspected to have its impact on the adaptability of the school systems.

Advocating the need and importance of adaptability, they write,

> ...to operate schools today in terms of the understandings of half a century ago, is to waste school funds and school time. Adaptability or the capacity to meet new needs by taking on new purposes and new practices, is indispensable to the effective functioning of any school system. (Mort and Cornell, 1938a, p. X)

In 1934, Mort started his study of the structural aspect of local support or local initiative. The findings of the study led to the conclusion that the study of local initiative should also include all the factors associated with the operation of the school study which make for experimentation and innovation and the study thus broadened out into a study of all local factors related to adaptability.

Study by Neulen (1928) and Wrightstone (1933) trying to find out the impact of state aid in bringing about changes could not give any details about the processes of adaptations involved therein.

Mort (1938a) gave away his investigations in state structure in the United States as well as in foreign countries in a book named: "Adaptability of Public School Systems', which helped in taking a number of studies on adaptability by acting as a statement of hypothesis for the pioneer Pennsylvania study also. It was useful as:

(i) it defined the concept of adaptability and a few terms associated with it;

(ii) it suggested some of the factors which were investigated later on as the controllers of adaptability in a community;

(iii) it gave definite suggestions on how the adaptation process should be studied; and

(iv) it pointed out needed areas for investigation for future studies.

Once the concept of adaptability was defined, a number of studies mostly at the doctoral level followed. These studies were concerned about finding the relationship between educational adaptation and the ability of the communities, the type of administration and the school adaptability, factors stimulating or retarding adaptability etc. ((Knott (1939), Farnsworth (1940), Cellie (1940), Ebey (1940), and Bateman (1940)).

Mort and Cornell (1941) completed an extensive study of school adaptability in the State of Pennsylvania. This study identified 67 factors influencing adaptability.

During the early forties a number of tools were developed to measure the school quality in terms of the degree of adaptability. The most prominent amongst these tools developed by Mort, Vincent and Newell (1953) is "Growing Edge" for elementary and secondary schools. A second instrument developed by Mort and Pierce (1947) is the "Time Scale". With the availability of different tools to measure the school adaptability, a large number of studies were undertaken mainly concentrating on the factors affecting the innovativeness of schools.

Some of the major factors of a general nature which have been studied by a large number of researchers are: (i) financial support, (ii) community characteristics, (iii) staff characteristics, (iv) administrative behaviour of the principal, and (v) organizational climate.

Financial support:- Ayer (1920) and Mort (1941) indicated that the single most influencing factor in school adaptability is the money that is spent per pupil. They found a definite relationship between expenditure and quality education.

Studies by Vincents (1945) and Wollatt (1949) advocate the same line of thinking as that of Mort that, there is no ceiling on the quality of schools that comes with higher expenditure. Brickell (1953) and Teresa (1955) in their different studies found that the expenditures for secretarial and custodial services, instructional supplies etc., being relatively small in comparison to teacher salary cost, have an influence on adaptability almost as great as salary costs. Campbell (1956) gave the conclusion that money spent to purchase things to enrich the curriculum was extremely important in producing adaptability.

Ross (1957) theorizes that among the great variety of factors related to innovativeness among schools, the best single predictor of this dimension is

educational expenditure per pupil.

Carlson (1965a) presented conflicting data which does not support Ross' theory. From his study of Alleghany County and West Virginia schools, he found that expenditure level is not a powerful predictor of the amount of acceptance of new educational practices, at least as far as his sample school systems were concerned. On the contrary, he found that the only powerful factor in adoption of educational innovations is the superintendent. Laverne Marcum (1968) found significant difference between expenditure incurred per student in most innovative and least innovative schools. The level of expenditure was higher in most innovativea schools. Roosa Jack (1969) also found significant relationship (Pearson r = .67) between expenditure per pupil and the rate of adoption of educational innovations.

Community characteristics:- Mort and Cornell (1938a) found significant relationship between the community characteristics and quality growth in schools. Mort along with Cornell and Hinton (1938) developed a 100-question poll, to measure the level of public understanding. Again in order to explain in meaningful terms the implications and characteristics of an up-to-date school to laymen, Mort and Vincent (1946) wrote a book, 'A Look at Our Schools". McCormick (1949) and

Walling (1951) developed two more polls to measure public understanding.

Studies by Begg (1947), Roberts (1948), Fisk (1950), Beach (1949) deal with broad problems of lay understanding and techniques for favourably affecting this understanding. Hedlund's (1947) study is of great help specially to administrators in evaluating the understanding of the public.

Britton's (1947) study revealed the fact that individual disgrunted parents work as a strongly unfavourable factor in adopting systems. Gallagher's study (1949) shows the importance of having a thorough knowledge for the principal about the friendly as well as unfriendly organizations connected with the school systems. This according to his study helps in tackling such organizations while introducing new changes.

Feldvebel (1964) found that schools in the disadvantaged areas showed less open climate while introducing the changes in the systems.

Staff characteristics:- The issues of interest indicated by the Pennsylvania study were taken up by the Metropolitan School Study Council (M.S.S.C.) research personnel in the early 1940s. Of great concern were the issues of staff characteristics which believed to be

carrying considerable weightage on adaptability.

Buley (1947) used the information about staff characteristics obtained through the use of "Dynamic Manual" in M.S.S.C. schools. He studied the areas like age, variety of experience and interests, home-ownership, and reading habits of the staff and tried to find out their effect on adaptability. Thus, he sought general staff patterns related to the quality of schools. Eastmond (1951) worked on Buley's information in order to determine the factors which are fundamental and are related to the production of a high quality of educational programme. He identified six factors. They are:

(i) Maturity, broad interests,
(ii) High professional training and diversified background,
(iii) Stability, security,
(iv) Outside-of-school interests,
(v) Independence, and
(vi) Age, out-breeding.

(Ross, 1958, p.578)

Boyer (1954) through his study further confirmed the data obtained by Buley and Eastmond.

Ross and McKenna (1955) studied class-size and staff capacity while taking up new practices.

Chase (1951), Moyer (1954), Bidwell (1955) tried to study the involvement and participation of the staff and quality of education. Marion (1966), Laverne (1968) and Bhogle (1969) found out the existence or otherwise of relationship between age, years of service, experience in the profession, and sex of the staff and the acceptance of innovations by schools.

Administrative behaviour:- The most important factor in change-rate is access to ideas and concepts of others. An administrative structure which operates to inhibit the free flow of ideas and leadership acts, retards the growth and orderly change of the organization. So there must be some one in the organization to decide for change or be intrigued with a new idea and help some one else decide to effect a change.

In a hierarchical organizational arrangement like an educational system, the superintendent or the principal of the school is believed to be the key person for the entire innovative process taking shape in the school. He is supposed to create the image of himself as receptive to new ideas and operate in such a way that others in the organization feel free to either bring ideas to him or to pursue on their own ideas which seem to have merit.

Ebey (1940) undertook a study of the white elementary schools of St.Louis to find out the factors

most conducive to adaptability. He at the end of his study concluded that principal of a school contributed the most to the adaptability of the school. Among the other personality characteristics of the principal, he found that recency of training and his educational opinion bore the highest relationship to adaptability.

Mort and Cornell (1941) after the study of nine adaptations in Pennsylvania gave the opinion that in over half of the cases, the superintendent's role was that of a leader. Their study further confirmed that the superintendent maintained his leadership through its "quality" rather than because of any hierarchy involved.

Berthold's (1951) study emphasized a clear understanding of psychological and sociological considerations behind the change from the principal. He believed that a dichotomy between the actual understanding of educational problems and the implementation of certain practices by the principal generally brings lag in the educational system. Collins (1951) study paved the way for the school administrators as to how they can become more aware of the human resources on the staff of their school.

Ovsiew's (1953) data of 350 administrators from 70 school systems gave guidelines for the effective intervisitation programmes of the principals and teachers.

Campbell's (1956) compilation of Ovsiew's practices proved to be of great help to the administrators heading towards adaptability of the school systems by introducing new practices.

Important work on leadership behaviour in the educational setting, using a role analysis approach has been carried out by Getzels (1952) and Guba and Getzels (1957). Getzels (1952) has postulated three different types of leader: the 'nomothetic', the 'ideographic', and the 'transactional'. The nomothetic leader stresses institutional requirements, believes his authority to be vested mainly in his office, places heavy emphasis on rules and procedures and tends to ignore follower needs. While the ideographic leader, on the other hand, stresses the demands of the individual's needs and personality and tends to minimize organizational requirements. While the transactional leader combines elements of both the above mentioned types and represents the 'ideal'.

From the investigations done by Gross et al.(1958) into the role of the American school superintendent, one thing was clearly seen that the position of superintendent is one in which considerable role conflict arising from perceived incompatible expectations would be expected.

Another major study of leadership in State schools was also carried out by Gross (1965). The

assumption of the study was that the principal's practice of formal leadership provided him with the opportunity to motivate his staff, to offer them valuable advice, to make meetings an important and stimulating educational experience, in short, to maximize the different skills of the teachers. The specific question posed was: 'does the degree to which the principal attempts to give such leadership to his staff have a favourable effect upon teacher's morale, their performance in the classroom, and the learning of their pupils?' The finding of the study showed conclusively that it did.

Much of the social psychological approach to the study of leadership, both in the school generally and in the classroom, has been characterized by the use of a single polarized dimension of leadership behaviour. Possibly the oldest of these, and one of the more commonly used, is that of the 'democratic' dimension first notably used by the psychologist Kurt Lewin and his associates in their studies, made in the 'thirties', of group reactions to different leadership styles. White and Lippitt (1960), Bradford and Lippitt (1945) had added laissez-faire style of leader to this typology. Other dichotomies like the 'traditional - progressive', 'traditional-co-operative', 'authoritarian and non-authoritarian' have also been frequently used. Halpin (1956) in his investigation of the leadership behaviour of American Air Force Officers,

found two major factors related in the leadership behaviour style, viz. initiating structure and consideration. One was related to the leader's behaviour in trying to establish 'well defined patterns of organization, channels of communication and methods of procedure'. The second refers to 'behaviour indicative of mutual trust, respect and warmth in the relationship between the leader and the members of his staff'. Halpin studied these two fundamental dimensions of leader behaviour by means of a specially devised Leader Behaviour Descriptive Questionnaire in his later study of school superintendents.

A number of studies on the basis of this past literature had been taken up by different research workers on one or the other personality aspect of the Principal and adoption of innovations by the school systems.

Chester, Schmuck, and Lippitt (1963) in their study found that principal was the key factor in encouraging innovations in the schools. They found that schools where the teachers found the support from the principal in taking up new innovations reported 5.2 innovations per teacher whereas in the schools where the teachers did not find any such encouraging support reported only 3.5 innovations per teacher.

The outstanding work which can be of utmost importance in so far as the superintendent and adoption of innovations are concerned is that of Carlson, Carlson (1965a) in his data of 53 superintendents of Alleghany County and West Virginia, found that superintendent is the only factor round which the whole system revolves. He studied every possible characteristics of the superintendent having its effect on the rate of adoption of the school system. We find a number of studies on the different aspects of principal's personality and its impact on the school adaptability.

Gallaher (1965) strongly advocated that the school administrator should not push an innovation for acceptance by his staff. He feels that the principal must serve as a mediator of an innovation both inside the staff and between the school and the community.

Marion (1966) studied a number of personal characteristics of the principal and related them to his innovativeness. Some of the factors included in his study are, anxiety, dogmatism, mental rigidity amount of education, professionalism, cosmopoliteness, opinion leadership.

Carnie and Lawrence (1967) studied the personality characteristics of the principals and their willingness to accept innovations in schools, McPhee

(1967), Klingberg (1967), Kelly (1967) studied the role of the principal in adapting innovations in the school systems. Factors like age, experience, tenure, professional background and their relations to the adoption of innovations have been studied by Hall (1967), Bhogle(1969), Bullock (1969), Kaplan (1970) and others.

Factors like principal's dogmatism and its effect on adoption, his academic training and role perception have been studied by Majoribank (1970) and Bullock (1969) respectively.

Organizational climate:- It is recognized that the well-being and effectiveness of the institution are dependent upon the extent to which and the manner in which each member of the institution accepts his responsibilities, exercises his rights and authority and performs his duties.

Miles (1965) suggested that organizational dynamics should be the focus of attention in any study on adoption of innovations. He states that attention to the structure and functioning of educational organizations becomes essential if the processes of educational improvement are to be understood and controlled in any coherent way. Larry Hughes (1965) concludes that there are possible effects of the organizational climate as shown by the behaviour characteristics of the Central Administrative Officers on the adaptability or the

innovativeness of the school systems of that district.

Bhola's (1965) studies have indicated the need to recognize the physical, social and intellectual environments in studying the innovation. The environment may be supportive, neutral or inhibiting to the innovation. Even a strongly supportive environment has possible pitfalls, for here the rate of change of innovations may be so rapid that one innovation is replaced before any measurable results can be attained.

Laverne (1968) from his study of organizational climate and adoption of educational innovations concludes that there is a significant difference between school climates for the most innovative and the least innovative schools. Schools involved in innovation always showed open climate. Bennet (1968) studied the relationship between organizational climate and their dimensions with number of educational innovations adopted by the secondary schools. He established the fact that with higher production emphasis, there were greater number of innovations in the system.

Roosa (1969) found no significant relationship between organizational climate and rate of adoption of educational innovations. He could justify the assumptions about the relationships between some of the behaviour characteristics of the leader and the rate of

adoption of educational innovations.

Hilfinker feels that in order to meet the pressures for change and innovation there is a need for a "self-renewing posture" in education:

> If a self-renewing posture is to be achieved, educators will need to experience a greater degree of freedom to take professional risks. Risk-taking, in terms of attempting educational innovations or changing existing practices, is a necessary aspect of a free educational environment. Such an environment is largely human; consequently change efforts need to be directed toward people who are in reality the essential ingredients of the educative community. (Hilfinker, 1969, p. 1)

Harold Gentry and James Kenney (1965) conducted a comparative study of organizational climates of Negro and White elementary schools in the urban areas. They found that Negro faculties see the faculty group as having rather low morale and as being highly disengaged from their tasks, while the White faculties found higher morale within the faculty group. Leadership in Negro faculties centred in the principal, while in White faculties it arose from the faculty group and the principal both.

Miller (1965) from his study could conclude that higher level of pupil achievement was found in schools where the teachers' behaviour was characterized by high level of social needs satisfaction. Robert Rice (1968) tried to find out relationship between organizational

climate and student achievement in 80 schools from a large California school district, He could not find any relationship between students' achievement and any of the eight dimensions of the climate. Sharma (1968) studied relationship between school achievement index and organizational climate in the State of Rajasthan. He found high positive correlation between autonomous and open climate and school achievement index.

IMPLICATIONS OF THE RESEARCH REVIEW FOR THE PRESENT STUDY

The present review of research indicates that research has been undertaken more in the area of adoption process and school adaptability. The studies in the area of school adaptability have concentrated on identifying factors related to it. Except one or two studies, most of the studies have studied only a few factors at a time. Carlson has studied such factors as characteristics of superintendents, their habits of communication, their position in the social structure and characteristics of innovations. Under these broad categories he has selected twentyfive different variables. Marion has mainly studied a few of the psychological traits of superintendents and their relation with innovativeness. Both these studies have used regression analysis and multiple correlation for prediction. The studies by Rao and Bhogle which are

the only Indian studies related to adoption of educational innovations deal with either characteristics of innovations or a few psychological traits of principals and teachers. That the school should be the unit in the study of innovativeness has been clearly brought out by various studies mentioned above. Within the school, the principal is the key factor influencing the school adaptability. This is also clearly brought out from the above review. Merely studying the principal in isolation will not be adequate. The principal functions in a system and not in vacuum. His behaviour and his interaction with the faculty and the interaction between the individual members of the staff may determine the potentiality of a school to change rapidly. The management, the community, colleges of education, the district education officer are other factors requiring attention. The present review thus provides necessary background on which a new study should be based. To develop greater insight into the problem of adaptability of Indian schools, it is necessary to identify a large number of variables and study their relationship with the ability of the schools to change rapidly. The problem and the various variables selected for the study are discussed in the next chapter.