

CHAPTER



REVIEW OF RELATED RESEARCHES

'Man is the only creature that does not have to begin a new in every generation; but can take the advantages of the knowledge which has accumulated through the centuries. This fact of particular importance in research, which operates as a continuous function of ever closer approximation to the truth. The investigator can be sure that his problem does not exist in vacuum, and that considerable work has already been done on problems which are directly related to his proposed investigation. The success of his efforts will depend in no small measure on the extent to which he capitalizes on the advances made by the previous researches.'

- Mouly

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II

REVIEW OF RELATED RESEARCHES

2.1 Introduction

From the heap of researches that has been done in the area of 'innovations in education' in foreign countries, the investigator has made an effort to review only the selected relevant studies that throw light on the problem of present investigation which is 'A Study of Innovative Proneness of Secondary and Higher Secondary School Teachers'. The main focus of the study is on instrumentation and with the help of this instrument developed by the investigator on finding out the relationship of various components of innovative proneness with the personal variables of the teachers working in Secondary and Higher Secondary schools of Gujarat. With this focus in view the investigator has reviewed the relevant foreign studies in this area. So far as studies done in India and in this area is concerned, the Centre of Advanced Study in Education of The Maharaja Sayajirao University of Baroda has given the major contribution followed by Sardar Patel University of

Vallabh Vidyanagar. From these studies the investigator has tried not to leave any study without being reviewed here in this chapter.

This chapter contains initially the researches reviewed by other American researchers who have done the pioneering work in this area, viz., Rogers (1962), Binstock (1965), Mort (1938), Miles (1964). This section also contains the brief review of the findings of the other researchers. Thereafter the detailed review of the researches done very recently in the foreign countries is given in this chapter. The review of Indian studies is presented thereafter.

2.2 The Importance of The Review of Previous Researches

The present chapter is found in most of the research studies. The importance of the review of the related literature and previous researches is quite obvious. The review indicates what has already been studied by others to date, which has a bearing upon the problem of the investigator. The purpose of this chapter is to provide a brief and initial review and appraisal of any of the related studies and to show how the present study contributes more or advance the available knowledge further

in the area under study. This chapter also gives report of research in which the similar concepts tool and techniques have been used successfully and which the investigator intends to use in his research. All this discussion forms a necessary background for the work and serves also as a test of required knowledge with which the investigator must be acquainted. (Patel, and Lulla, 1964).

According to Kerlinger (1964), there are two main reasons for discussing the general and research literature related to the research problem : The first of these is the more important to explain and clarify the theoretical rationale of the problem. A second reason for discussing the literature is to tell the reader what research has not been done on the problem. The underlying purpose of course, is to locate the present research in the existing body of research on the subject and to point out what it contributes to the subject.

According to Good and Scates (1954), the review of the past studies gives the history, background and the links of the various researches done in the area under study, and a reader who is a stranger gets the global

picture of the background and the rationale of the problem under investigation.

The review of the previous researches also provides suggestions for further research. From these suggestions and implications the investigator gets links and guidelines for his own study.

The present investigator has generally kept almost all these points in view while reviewing the previous related studies.

2.3 Researches Reviewed in Foreign Studies on Innovations in the Field of Education

Rogers (1962) has summarized more than five hundred studies from all research traditions including education. But according to Rogers' studies in the field of education contribute very little to the understanding of the diffusion of ideas. However, Rogers' analysis of the adoption process in different research traditions has proved useful even in the field of education.

Binenstock (1965) warned educators against the hazards of relying too much upon the findings of researchers in other fields when dealing with change in education. The reason drawn out was that adoption of new practices is not necessarily influenced by the same factors nor does it

follow the same course. But it can be easily derived that knowledge so gained from any of the fields is certainly helpful in planning researches in the others by way of transfer of learning. Researches done in other areas can provide models and motivation to the educational practitioners.

The history of education-diffusion studies dates back to the thirties of the century. Paul Mort, the pioneer in this field has been described as 'guiding force'. A majority of education-diffusion studies have been done at Columbia University's Teachers' College under his sponsorship. Mort and his students completed nearly 200 studies on the adaptability of public schools. Mort and his students completed nearly 200 studies that are published in Mort and Cornell's (1938) 'Adaptability of public school system', based on Mort's finance studies and state structure of schools. This work has been made valuable contributions in defining the concept of adaptability and another associated terms in identifying factors.

Bose (1958) reports that about fifty years lapsed after development of a new practice before the adoption

by the public school and average American school lags 25 years behind the rest in adopting the practice. The cause of course has been studied by many researchers. Miles (1964) not only presented a rationale for change, but cited many examples for change in American schools. Some valuable work has been done in the Centre for the Advanced Study of Educational Administration, University of Oregon.

Carlson (1964 and 1965) studied the school superintendents to discover what caused them to adopt new innovations. This study is mainly dealing with the superintendents as the adopting unit and described him as decision-maker. The study hardly relates with teacher. Teacher is just touched for the sake of the study and because they are related. Johnson, et al. (1967) also studied the personality characteristics of school superintendents in relation to their willingness to accept innovations in education.

Roosa (1969) studied organizational climate, leader behaviour and their relations to the rate of adoption. Levertte (1968) also studied the relationship between organizational climate, age of the staff, years in the

school, and number of professional staff, perception of teachers and administrators at the most innovative and least innovative schools.

The studies that have reviewed here before reveal that in all these studies the unit of analysis was the school as a system. During recent years a shift in this trend has been observed. Researchers are also trying to concentrate on the study of teacher characteristics as the teachers are the ultimate users of innovations.

Buley (1947) studied personal characteristics and staff patterns - associated with the quality of education. Eastnend (1950, 1951, and 1954) analysed the characteristics of school staff in order to determine what fundamental factors are functional and related to the production of high quality of educational programmes.

Boyer's (1954) work confirms the findings of Buley and Eastnend. Williams and Bull (1968) found out the variables influencing teachers adoption of cooperative agricultural occupation curricula.

Walberg and Welch (1967) found innovative physics teachers scored higher on theoretical and aesthetic values than other male high school teacher, but lower on economic, religious, and political values. The innovative teachers scored much higher on a physics achievement test. Compared with the other high school science teacher, they are less autonomous and heterosexual. The teachers who have a firm grasp of their subject not only have more positive attitude towards teaching, but appear to be less interceptive. Bickert, (1968) studies organizational values and characteristics of school system. Classroom teacher from innovative school system showed a relatively high degree or satisfaction with instructional programmes in their school, which those in non-innovative school appeared relatively dissatisfied with many of the innovational aspects and the instructional programme of their system.

Butts and Rour's (1968) study in teacher change shows that the dimensions of the teacher's previous experience which are significantly related to a change in teacher's perception of a curriculum innovation include her competency in science and her previous credit

in science. The study suggests that a teacher education programme can be expected to produce the greatest change in perception of the innovation with a teacher who has a number of years of teaching experience but who has few hours previous science courses. It also shows that the competency in science of a teacher effects change in the teacher's practice of a curriculum innovation.

Gallagher (1965) suggested that, 'the better teachers in a given school are more likely to accept innovation than poor ones. Glines (1966) says that the strategy for change is simple, if the school's administration encourages innovative teachers to innovate. Once this occurs, good teachers find their motivation in personal satisfaction derived from using more effective ways of teaching.

Mecomes (1962) in a study of role of vocational agriculture teachers found that effective teachers of agriculture and their administrators in agreement concerning the role expectations of teachers. Chesler and Fox (1967) reported that teachers need to feel involved and potent in their organizations in order to support educational change, they must know that they

have the backing of their fellow teachers and their administrators if they are willing to try new ideas. Science change may involve public attention and risk, teachers who feel that they do not have support are less likely to go out for change of their own than more secure teachers. The teacher must feel capable to perform a new role if required by the innovation.

Rogers (1965) advocated that an individual teacher influences the innovativeness of the school system. Allowing teachers to attend out of town educational meetings, workshops, conferences where they may be exposed to new ideas, may be a wise instrument for initiating change. In 1966, a study was conducted by Rogers and others, through the sponsorship of Michigan State University which served as a pilot for the main study conducted in Thailand. Both the studies show that age, faculty cohesiveness, feeling of security, knowledge about the innovation, more years of education are positively related to the adoption of innovation.

A time has come when we need to look back and modify the concept - assumptions approach and method in the researches done in diffusion of innovations. The fact

remains that the teachers, principals, superintendents, or other administrators do not work in isolation but in an organization, in social milieu. If they are studied in isolation, the results will not be reliable one. In an analysis of the diffusion of innovations to teachers in their government secondary schools.

Mortimore (1968) found very low correlation mostly because of the structural effects were almost ignored. Bhola's (1965) findings have emphasized the need to recognize physical, social and intellectual environments in studying the innovation.

Griffith (1964) and Pallgrin (1966) are of the opinion that the major stimuli for educational innovations and change come from external sources. Hilfiker (1969) on the other hand emphasized the need for a self-renewing posture in education to meet the pressures of change.

Almost all the studies mentioned here in the preceding pages have focussed on the nature of organizations either ready or otherwise for the adoption of new ideas. Most of the studies are based on organizational health. As referred to earlier, here in this area the renowned researchers are Rogers, Miles and Miller. The

idea accompanied back with Indian visitors who visited foreign countries. The evidences relate back to fifties. But the considerable amount of work began from early seventies, when the CASE, Baroda identified with this area of change and innovation. All these efforts were in connection with the nature of organization. Slowly and gradually, it shifted to individuals and at last the investigator is dealingw with innovative proneness of the teacher of secondary and higher secondary schools. The similar work has already been done with teacher educators of Gujarat.

In the subsequent section some more studies are reviewed in detail.

2.4 Review of Studies done in Foreign Countries

In the previous section a very brief review of the researches in the area done in foreign countries has been made. Some of the researchers mentioned therein the previous section have done the foundation work in this area. The present section gives in chronological order the detailed review of the recent studies done in this area.

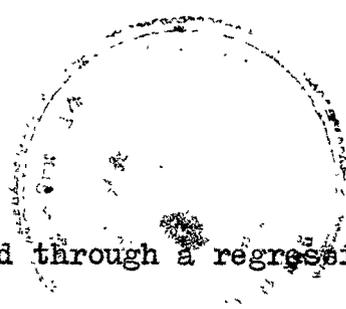
Roger's adoption process model and Bidwell's concept of structural looseness based on an interaction of the hierarchical and professionalization aspects of organization formed the basis for a theoretical framework of Henderson's (1975), study to determine whether innovations in education are dependent upon individuals passing through a process of adoption, as well as upon the organizational context of education. An instrument to measure adoption was developed using a four-stage process of awareness, interest, evaluation and adoption. The hierarchical nature of the organizational structure of education was defined in terms of classroom, school and board while the professionalization aspect was determined by the extent to which subunits of organization made decisions independently. Evidence of that independence was observed in the degree of variation among the organizational units of classroom, school and board in the adoption of innovations.

A survey design was used to explore the problem at a macroscopic level. An instrument based on the four stages of adoption was developed to measure the adoption of twenty four innovations selected from the literature and in particular from a compendium of practices

reported by Ontario superintendents in 1969 as innovations to their boards.

The basic data was obtained from 1246 teachers who came from a random sample based with two exceptions, on a random selection of twenty schools from seventeen boards. Six of the nine boards in 'defined cities' agreed to participate and the remaining eleven boards were randomly selected from among the public elementary schools of Ontario. Only teachers of children in the three post-kindergarten years used to allow equal applicability of the selected innovations.

Analysis included the measurement of adoption based on teacher mean scores which in turn were averaged to obtain school and board scores. A coefficient of reproducibility was used to determine whether the items in the adoption instrument formed a scale in the Guttman sense. A measure of variation within organizational units was obtained by means of variance components analysis technique and patterns of variation across levels was determined by a Friedman two-way analysis of variance by ranks. The effect of



background variables was gained through a regression and step-wise regression analysis.

Strong evidence was found to support the progress of teachers through a series of stages in the adoption process. The stage most often missed, though still to a minor degree, was the interest stage. Some innovations were so commonly adopted as to be the most universal in their acceptance. Twelve of that twenty-four innovations were found to be at an 'active' level of adoption. The innovations least adopted were of the technological and 'people' kind.

Organizational level was found to have an effect on adoption with the greatest effect demonstrated at the school level. The background variables for teachers, schools and boards which were selected for study were found to have little effect on adoption behaviour.

Five main conclusions were reached. Teachers were found to progress through a process of stages in arriving at a decision to adopt an innovation. When it comes to adoption, teachers are affected by the organizational context in which they work and that effect is greatest at the school level. Innovations associated with technology

and personnel are least adopted.

A classification of innovations termed Content Type and Application Type based on educational rather than sociological factors was found to be useful in a study of innovation in education. A search for background variables more closely associated with organizational structure and environment is proposed.

The study reviewed above is based on the development of instrument to measure the adoption of twenty four innovations selected from the literature, whereas the present investigation is based on the construction and standardization of Innovative Proneness Scale for the teachers of secondary and higher secondary schools of Gujarat. Thus, the process of instrumentation is common in both the studies.

With a view to studying certain relationships among 'innovation adoption', 'organizational climate' and 'Principals' change agent style' in Tennessee Public Schools, and in view of the hypotheses that the school which will react most successfully to stress is one in which the principal's change strategies are congruent with faculties primary compliance pattern ; with a sample

of 126 Tennessee Public High Schools ; and with a use of OCDQ (Organizational Climate Description Questionnaire by Halpin and Croft) and Change Agent Questionnaire, Francis (1976) found that (i) the relationship between openness of climate and total innovation tended towards significance, and the relationship tended to be linear; (ii) a significant relationships were found between openness of climate and each of the factors namely (a) staff development, (b) curriculum, (c) instruction, evaluation and reporting; (iii) the relation between change agent style and total innovation was not significant ; (iv) areas which are more nearly under staff control where the relationship is strongest are (a) instruction, evaluation and reporting, (b) individualization, (c) curriculum, (d) students' affairs and (e) staff development, (v) the expected effective change agent style the 9/9 'Change via credibility' produced a biamodal distribution with schools ranking either high or low in innovation, (vi) the expected work change agent style the 1/1 'Custodial change' had schools which tended to rank high or average in innovation, (vii) no significant relation was found between openness of climate and change agent style. It has been reported that the results do not

support the hypothesized theory.

The author of the above reviewed study has recommended that (i) the relationship between Principal's Change Agent style, his innovative intent, and the innovation which takes place should be further investigated, (ii) the administration of a school where innovation is an objective should strive for a more open climate; (iii) instrumentation procedure should be modified.

From the above review it appears that climate of the schools plays the significant role in the adoption process of innovation, and the school administrator should try to build open climate in the school. For the present investigation the last recommendation offered by the author of the study reviewed above is very useful. The focus of the present investigator is no doubt on instrumentation. ✓

Shipman's (1976) study explored the change process from the adoption diffusion approach with emphasis on the individual innovation user. The problem of (1) copying with change, (2) the time lag for adoption of educational innovations and (3) needed interventions by change agents ?

focused this study on the educational innovation of career education in the State of Ohio, a typical example of the innovation encompassing all three problems. Review of the research literature suggested a task/relationship dimension to innovator personality which might well be related to levels of use of an innovation. Task/relationship personality dimensions were measured as leadership styles using the LEAD self instrument, a self-perception measure. A stratified random sample, stratified by geographic district, grade level, and number of years in the Career Education Program, was drawn from teachers involved in thirteen of the thirty-two Experimental Career Education School districts in Ohio. A total of 297 Ss were classified by a dominant personality types as measured by LEAD Self. Each subject was rated, using the levels USE (LOU) of an innovation technique, as to their correct level of USE (zero to seven) of the Career Education Innovation on four categories of use : Performing, Sharing, Status reporting, and Acquiring information. Statistical analyses revealed no significant relationship between User Personality as measured by LEAD style and levels of Use (LOU). A total of 97 percent of the Ss fell in the 'High relationship' dimensions of Personality types

and the rest fell into the 'Low-relationship' dimensions. This finding suggests a relationship between personality types in a sample distribution of the educators involved in an innovation adoption but does not suggest that personality characteristics as measured by LEAD styles affect the Levels of Use (LOU) of the innovation, Career Education in Ohio.

The study by Marsten (1976) is very nearer to that of the study undertaken by the investigator. With a view to determine whether characteristics such as age, sex, training, level of instruction and the general innovative climate of the school are related to innovation, and with a random sample of 63 secondary school social studies teachers who responded the questionnaire containing items related to (i) demographic information, (ii) teacher perception of the innovative climate of their schools, (iii) types of innovation made by teachers and (iv) the attitude of teachers towards sharing information Marsten (1976) arrived at the findings that it is not possible to identify innovative teachers by sex, age, teaching experience, membership in professional organizations, teaching level

or the possession of tenure; that the innovative teachers tend to have more university degrees, read more professional journals, attend more conferences and travel more widely than non-innovative teachers; that the both innovative and non-innovative teachers perceive their school climate to be mildly supportive of innovation; that the chief source of discouragement were the students; that the classroom teachers were the most responsible to initiate change ; that the innovations originating with teachers were usually directed at the individual student's learning difficulties, and that the innovative teachers willingly cooperate with other teachers, but generally develop innovations individually.

The study reviewed above is of special significance for the present investigator who has taken the similar demographic variables of the teachers in his study that is being reported.

This study by Catone (1976) has focused on three areas (1) attitude and communication, (2) homophily and heterophily, and (3) opinion leaders and liasions.

The following seven hypotheses were postulated :

Communication Pattern and Attitude

1. As the group mean score of attitudes towards modules, competencies, and self-initiating learning activities increases, there will be no significant increase in the percentage of upward communication patterns in the population from the first week to the sixth week nor from the first week to the twelfth week.
2. As the group mean score of attitudes toward modules, competencies, and self-initiating activities increases, there will be no significant increase in the percentage of downward communication patterns in the population from the first week to the twelfth week.
3. As the group mean score of attitudes toward Modules competencies, and self-initiating learning activities increases, there will be no significant increase in the percentage of horizontal communication patterns in the population from the first week to the sixth week nor from the first week to the twelfth week.

Homophily and Heterophily

4. There will be no significant difference between score of cosmopolitaness between individuals of a dyadic pair during the first, sixth, and twelfth weeks.

5. As the group mean scores of attitudes towards modulus, competencies, and self-initiating learning activities, increases, there will be no significant increase in the means of the differences between scores of cosmopolitanness of a dyadic pair.

Opinion Leaders and Liasons

6. There is no relationship between persons who are considered opinion leaders the first week and persons who are considered opinion leaders the sixth week or twelfth week.
7. There is no relationship between persons who act as liasons the first week and persons who act as liasons the sixth week or the twelfth week.

In addition, the following research questions were posed :

1. What are the characteristics of opinion leaders ?
2. What are the characteristics of liaisons ?

A t-test was used to determine significant increase in mean attitude scores for competencies, self-initiating learning activities, and modules. Increases in percentage of communication patterns were determined and compared to attitude scores. Since only one measurement for competencies reached the .05 level, the hypotheses concerning attitudes were only partially

tested. A t-test was used to determine significance for the means of the differences between cosmopolitaness scores of dyads. In addition, sociometric analysis revealed opinion leaders and liaisons. Information gathered from data collection sheets was used to describe the characteristics of the opinion leaders and the liaisons.

The result indicated - there was no relationship between the competency mean attitude score and communication patterns from the first to the second measurement. No significant relationship was found between competency mean attitude score and means of the differences in regard to cosmopolitaness scores of dyads. There was, however, a significant increase in the means of the differences in regard to cosmopolitaness scores of dyads between the second and third measurements and between the first and third measurements. This finding indicated that there was a trend toward heterophily. Sociometric analysis revealed the existance of a total of five opinion leaders and one liaison. Except for one measurement interval, the subjects nominated as opinion leaders were different for each measurement interval. One liaison was identified at the time of the

third measurement. No attempt was made to test the hypothesis regarding change in liaison role since only one was identified.

The study reviewed is of special importance to the present investigator with a reason of 'attitude' being common in both the studies. In the study reviewed the emphasis is on the development of attitude and in the present study undertaken by the investigator the emphasis is on the measurement of attitude of teachers towards innovations with the help of self-constructed and standardized tool.

Demyan (1976) undertook a very interesting study. The study focused on entire school staff. Data for analysis were derived from established instruments and constructed instruments. The two major concerns in the study were the data displays and the order and strengths of the variables set correlations.

It was hypothesized that there existed other variables of potential significant relationship to attitudes towards innovation.

The major variable set was that deriving from the value sources for the curriculum (the learner, the society and the disciplines). Based on the work of Rokeach, it was asserted

that a school staff's attitude toward innovation should follow from the intensity and order of importance placed on these three sources. An instrument based on suggested affectors of the curriculum was constructed.

The review of research also indicated the role of the principal in the innovative process was that of 'Gatekeeper' and that the most appropriate theory for assessing administrative behaviour was situational managerial theory.

The educational position Analysis Test developed by Raddin was selected. It was hypothesized that the set of descriptors from the instrument would be related to the attitude of a school toward innovation.

A set of ten general indicators of innovative schools presented by Goodlad and Klein was transformed into ten sets of pairs of educational concepts and the total twenty concepts rank individually. An innovational attitude indices set of variables was constructed. These values were used to describe the attitude toward innovation of a given school staff.

A demographic set of school system, school, and school administrator variables was used and correlated with the attitude toward innovation set as well.

The sample set consisted of 44 schools, ranging from K-12, that had volunteered from an initially randomly chosen set of schools in Ohio. Since demographic comparative data for Ohio schools were not available, a second set of 30 schools were randomly chosen and were found to be dissimilar on demographic measures from the sample set.

A canonical analysis was performed on each of the major relations as well as one subset and several component subsets. All canonical correlations were found to be significant ($P < .05$) for the tested variable groupings.

The amounts of redundancy in the left hand sets (demographic, value sources, and administrative) measured against the right hand set (attitude toward innovation) are summarized below.

<u>Set</u>	<u>Subset</u>	<u>Redundancy</u>
Administrative		54.7 %
	Situation	61.5 %
	Style	50 %
Value Source		43.3 %
	Test derived	84.4 %
	Openly derived	44.0 %
Demographic		34.8 %
Administrative and Value Sources		66.2 %

On the basis of these findings, it was concluded that the set most related to the attitude towards innovation of a school staff was the administrative set, and the least, the demographic set (the typically investigated set).

The variable subset most highly related to a school staff's attitude toward innovation was that based on the affectors instrument in the value sources set.

An important result from the research was the mapping of the attitude of a school based on the educational concept rankings of the entire school staff.

Again in this study also the focus is on attitude towards innovation. The author of the study reviewed above constructed on 'Innovational Attitude Indices Set of Variables'. The present investigator has constructed and standardized Innovative Proneness Scale (IPS) for secondary and higher secondary school teachers seeking to identify four aspects of Innovative Proneness of Teachers : (i) teachers expressed attitudes toward specific innovations and combinations of innovations having regard to the potential cumulative effect of attitudes arising from past experiences

with innovations ; (ii) teachers' general attitude to change or their change-related values ; (iii) teachers' preferred behaviours in relation to their perception of attitude of innovations, and (iv) teachers preferred behaviours in relation to their perception of the setting and circumstances in which innovations are introduced, and with the help of this instrument has studied 'Innovative Proneness of Teachers' with respect to their (a) age, (b) teaching experience, (c) sex, ^(d)professional satisfaction, (e) mobility, (f) participation in inservice education, (g) habit of reading professional literature, (h) professional training and (i) academic qualifications.

Organizational executive leadership is expected not only to maintain existing systems but to provide leadership within the framework of existing systems in regard to adoption of innovative solutions to organizational problems.

Chief school administrators, as executive leaders into the educational scene, are likewise expected to demonstrate similar maintenance/innovative behaviour with respect to the systems they serve. The study of the innovative behaviour of chief school administrators was

the subject of the investigation by Shanghanessy (1976).

This study was basically exploratory in nature and was designed to determine the interest among a population of fifty four Central New York State Chief School administrators in implementing a particular educational innovation. The innovation in point was a computer-based planning and decision-making model referred to as the MCGWIL Model. The computer model and allied instructional materials were developed in cooperation between Syracuse University and the Onodaga Madison Counties Board of Cooperative Educational Services where the writer was the Associate Superintendent. On^e explanatory pamphlet related to the model and a synchronized audio take-slide presentation were prepared to assist in the explanation of the innovation.

Each of the fifty four chief school administrators of the innovation, one half of the number received the informational pamphlet, designated as pre-exposure information.

Following the exposure of each chief school administrator to the innovation, data were collected from each chief school administrator via scales expressly

designed and field tested for that purpose. Instruments designed to secure data related to Understanding, Readiness, Acceptance, Conservatism, Dogmatism, and personal demographic data were distributed, completed by the CASE, and collected. Four weeks subsequent to exposure to the innovation and the initial testing, post-test data relating to Understanding, Readiness and Acceptance were collected from all Chief School administrators having been initially exposed to the innovation.

Statistical analyses performed on the collected data included Pearson product moment correlations, a Varimax orthogonal rotation and lastly a step-wise multiple regression. The latter treatment was designed to determine which variables tested were predictive of the adoption of the innovation. This was the main purpose of the exploration.

Fundamentally, the treatment of the data indicated that, for the population tested, those variables which were predictive of the adoption of the innovation were in decreasing order : (1) Readiness, (2) Age, (3) Years of Administrative Experience, (4) Knowledge of the Innovation and (5) Years of Teaching Experience. The five variables

contributed to a multiple correlation of 0.91 with the 'interest in implementing' variable and accounted for approximately 83 percent of the variance.

It may be concluded that although the results are not generalizable to larger samples of Chief School administrators, they do not constitute an initial stage of exploration which, hopefully, will permit other researchers to pursue the problem in depth. The author suggests additional research needs to be undertaken even though a large body of literature dealing with innovation exists. Because extremely little research exists which deals with the adoption of innovation among chief school administrators, especially innovations dealing with computer-related management systems. The body of research-based literature related to adoption of innovation by chief school administrators needs to be expanded; since executive officers of institutions can potentially affect great populations for better or wise. The need for more systematic study to provide an enriched knowledge base to benefit future administrators exists. This exploration constitutes a first step in that direction.

In the study reviewed above and the study undertaken by the investigator the common points are the personal variables of the administrators and the teachers respectively which are : age, years of (administrative) experience, years of teaching experience.

Clayton (1976), tried to relate facilities available in the school to the innovative instructional practices as perceived by principles in connecticut. He arrived at the following findings :

- (i) The majority of new elementary school utilised the wing design, were of one story construction, and were planned to house over 500 students. The physical feature most frequently designed into new schools were provisions to convert rooms or areas to various sizes. The implementation of individualized instruction and grouping of students for instructional purposes required the largest number of physical changes to school building.

The addition to partitions or moveable walls was the most required structural changes to accommodate innovative instructional practices.

- (ii) The left and cluster design schools were considered to be more adaptable than other designs to innovate instructional practices implemented after the school building had been occupied. The wing design school required more physical changes than other designs to accommodate new instructional practices.

- (iii) In the planning of schools the superintendent, school board and by members of the community, in rank order, made more contributions than other people involved. The principal and teacher contributions were considered to be less important than non-professional contributions to the planning process.

- (iv) The majority of principals were dissatisfied with the new elementary schools due to lack of flexibility in the building, and changes that were perceived as necessary for implementing innovative instructional practices, as well as lack of space for special functions such as special education classes.

The implications which may be drawn from this study are that as new school buildings are planned, utilization studies physical features to be included and comparison studies of instructional practices as they relate to various school designs could indicate the design of the building best suited to present and possible future instructional practices.

The general purpose of the study by Gifford (1976) were to (1) develop and refine an instrument to measure teacher attitude toward curriculum and (2) investigate the relationships between teacher attitude toward curriculum and acceptance of a program innovation by

students and teachers. Specifically, the objectives of this study were : to examine the relationship between : (1) Teacher attitude toward curriculum and teacher acceptance of a program innovation, (2) Teacher attitude toward curriculum and student acceptance of a program innovation. (3) Teacher acceptance and student acceptance of a program innovation.

The Attitude Toward Curriculum Survey (ATCS) was developed by the investigator to gather data regarding teacher attitude toward curriculum. The instrument employs the equal appearing intervals method in providing two factor scores as component of teacher attitude toward curriculum, Attitude Toward Curriculum Leadership and Attitude Toward Curriculum Plan. Data concerning acceptance of the program innovation was provided by responses to the Quarter System Questionnaire (QSQ), developed by an evaluation team at the University of Georgia.

The instruments were administered to a sample of 164 teachers and 3823 students in grades eight through twelve in a central Georgia school system which had adopted a quarter system plan involving numerous curriculum changes in the 1975-1976 school year.

The descriptive data obtained from the ATCS indicate that teachers involved in this study had a relatively

favourable attitude toward curriculum. This conclusion was supported by the fact that an analysis of the interrelationships among the variables in the ATCS yielded all significant and positive correlations. The results of a semantic differential section of the QJQ indicated that both teachers and students perceive the present school year to be active. Within the samples, the intercorrelations among the variables in this section were generally significant although analysis of the intercorrelations among the student and teacher responses resulted in only two significant correlations from 49 possibilities.

Analysis of individual item responses on a contrast question section of the QSQ indicated that both students and teachers feel that the increased course offerings were more interesting than the previous years, were chosen with more freedom by the students, provided more work for both students and teachers and permitted the students to accept more responsibility. All contrast questions on the QSD resulting in statistically significant correlations between students and teachers were concerned with the teacher. The samples agreed that there was more student-teacher contact and that teachers seemed better prepared

and felt better about this year. In contrast to these results is a significant negative correlation regarding the quality of teachers this year when compared to last year, with students being less positive in their evaluations.

The examination of relationships between teacher attitude toward curriculum and teacher acceptance of program innovation provided no statistically significant results. However, analysis of contributing factors within the teacher attitude variate suggested that teacher attitude toward leadership related to curricular activities has the greatest impact on this relationship. The data collected provided no statistical support for hypothesized relationship between teacher attitude toward curriculum and student acceptance of a program innovation. Application of Hock (1975) procedure for analysis of the variates provides evidence that students may perceive a program innovation to be potent when teachers have favourable attitudes toward the operative curriculum plan.

The results of the investigation of the relationship between teacher and student acceptance of a program innovation produced a canonical correlation coefficient significant at the .05 level. While analysis of the major contributors to the variates in this statistically significant relationship reveals a positive contribution of a teacher recognition of

contrast between the two years used for comparison purposes, the significant contributors to the student acceptance variate were all negative and with the dimensions of Activity and Potency as related to the present year. When combined, these results suggest that students are likely to have negative reactions with respect to acceptance of a program innovation if the teachers experience a substantial change in the curriculum.

The common feature of the study reviewed above and the present investigation is instrumentation. Gifford has studied the students also.

Coulson's (1976) study was initiated to gather and provide to school principals empirical evidence concerning specific behaviours which would help create a climate for productive change and increased innovation within the classroom environment. The study gathers data involving three major areas : (i) Principal's behaviour as perceived by teachers, (ii) Cognitive structures of principals in relation to work, (iii) Number of innovations taking place within a given building.

The sample includes fifteen selected secondary schools in western Oregon. Two questionnaires were used extensively throughout the study : (i) A Teacher Perception of Principal's

Behaviour Questionnaire, and (ii) A Work Motivation Inventory - The Teacher Perception of Principal's Behaviour Questionnaire originated with the investigator, while the Work Motivation Innovation is published by Telemeric International and used with their permission.

The Teacher Perception of Principal's Behaviour Questionnaire was designed to be subdivided into five scale scores, each measuring the teacher's perceptions of the five behaviours used in the study. These behaviours are public encouragement, initiating behaviours, delegating behaviours, communicating behaviour, and diagnosing behaviour. A seven point Likert-type scale was used to determine the participants' responses to the questions. The Work Motivation Inventory is based on Muslow's hierarchy of needs and is used to determine the Principal's cognitive structure involving work. Six hundred forty six teachers completed the Teacher Perception of Principal's Behaviour Questionnaire and fifteen principals completed the Work Motivation Inventory. Teachers were asked to indicate the number of innovations they had proposed, attempted or accepted throughout the previous year. This data was correlated against a teacher perception score for each behaviour. Data from the Teacher-Perception of Principal's Behaviour Questionnaire were used to place each school into

one of four categories - high teacher perception / high innovation, high teacher perception / low innovation, low teacher perception / high innovation, low teacher perception / low innovation significant differences were computed for each category.

The Work Motivation Inventory was analysed and principals given scores based on the norms established for the questionnaire. These results were used to develop patterns of behaviours and cognitive structures that are conducive to classroom innovation.

The major findings were :

- (i) All five behaviours were significant at the .01 level in relation to category one and four (Categories High teacher Perception / High innovation, low teacher perception / low innovation) ;
- (ii) Those principals in category One with high innovations also were high in Belonging Needs and Low in Ego status needs. With high Self-actualization need scores ;
- (iii) All principals had belonging need scores on or above the mean of the 900 people used to develop the norms for the Work Motivation Inventory ;
- (iv) The majority of principals having low innovation scores also had low public encouragement and low communication scores ;

- (v) No significant patterns of cognitive structures emerged from fifteen principals used in the study.

The author himself has concluded that -

- (i) there are significant principal behaviours as perceived by the teachers that can help create an environment conducive to classroom innovations;
- (ii) generally speaking, low individual Basic and Low safety needs with high self-actualization needs are necessary cognitive structures for the innovative principal;
- (iii) although data involving school size in relation to innovation was not measured in this study, it appeared that visibility of the principal could be a major factor in creating a climate for innovation.

From this study reviewed above it can be said that certain administrative norms of behaviour are the part of the principal and certain institutional norms of behaviour are the part of teachers to create a supporting climate for innovation is necessary. This factor has been taken care of in the instrument prepared by the present investigator.

The theme of Payne's (1976) study was to determine the relationship of selected individual and organizational variables and the degree of implementation of an innovation.

The innovation studied was instructional television. Implementation was viewed in the study as the amount of utilization of instructional television in classroom instructional in terms of frequency and hours of utilization. These criterion variable measures were also analysed by Placing 'Quality' utilization conditions as a part of the hours and frequency of utilization total score for the purpose of seeing if there would be any difference in the relationship between the criterion and predictor variables if the 'Quality' utilization conditions were imposed. quality utilization was defined as including (1) Previewing activities, (2) during viewing activities, and (2) post-viewing activities. Formal predictor variables in this study were those of progressivism-traditionalism ; open/closed-mindedness, evaluation (as feedback), Method of adoption, and Power as related to the superintendent, Principal and classroom teacher.

In addition, three empirically deduced variables were included in the study. Those three variables were size of school, quality of reaction, and availability of sets.

The sample consisted of elementary classroom teachers from Texas schools. For the purpose of examining differences

attributable to size of schools, fifteen large schools and fifteen small schools were selected. Large schools were made up of the five largest in each of the state's three television net works. While the small schools were made up of five schools of average daily attendance under 1,000 from each of the three networks. Instruments appropriate to the study's needs were developed for the criterion variables as well as for the predictor variables methods of adoption, evaluation, and superintendent, principal, and teacher power. For the purpose of securing operational measures for open/closed mindedness, Rokeach's Dogmatism scale was used and for the operational measure of progressivism-traditionalism Fred Kerlinger's Education VI instrument ~~VI~~ was used. The statistical techniques used to analyze the data were the UNICON Program for multiple regression analysis, F-Test and DISTAT for treatment of raw data. Study findings revealed that there was a significant positive relationship between the criterion variables and the predictor variables, evaluation. The introduction of 'quality' utilization as a part of the criterion measure reflected a change in the teacher power in that it becomes statistically significant. This indicated that when given sufficient power, teachers would use more instructional

television under higher 'quality' conditions. There was no positive relationship between the size of school and the amount of utilization. However, the other two empirically deduced variables, quality of reception and availability of sets, were to be significantly related to utilization and added greatly to the RSQ value. Campuses which utilized evaluation (as feedback) tended to utilize instructional television more than schools which did not, and teachers who perceived themselves as having greater power than their administrators utilized television more and under higher 'quality' conditions than did those who had a lesser amount of power.

However, because the average utilization scores were in the hypothesized direction (only two of the seven were found to be statistically significant), it was conclusion of the study that it might be more productive in future research to use case study techniques rather than those which employ sophisticated analytical techniques.

From the above reviewed study one can easily infer that the freedom given to teachers while putting a particular innovation into practice creates motivating effect on teachers. They should perceive that the work that they do is their own. This is a very crucial point in adopting any innovation.

There is a great deal of research which points to the principal as the school's potential change agent and also identifies him as the most influential person within the school. Studies have shown that the principal is the chief implementer of change and innovation and is in a special position to foster or to stifle any attempt at innovation. There is also much information in the literature which relates the behaviours of the school principal to the success or failure of innovation. Researchers have also indicated that teachers are not considered change agents, but in fact, teachers are often very reluctant to alter the existing situation.

Although the psychology of change and leadership has been extensively researched, very little of it has been put into a form which could be useful to the principal. As a result, the principal often operates within a historical prospective, independent and unaware of current leadership research and theory.

The population for the study, completed by Kelleher (1977) under the auspices of the Massachusetts Elementary Science Implementation Project (MESIP), centred at Boston College, consisted of Principals from 33 Massachusetts

Public School systems. The project was to provide guidance for the systems as they implemented a curriculum innovation.

The subjects ($N = 78$) were elementary school principals from 28 to 33 MESIP school systems. All 78 principals (86% male and 14% female) were involved in implementing an innovative science curriculum within their schools and had volunteered to participate in the study.

The study was a descriptive one serving the purpose of gathering much of the existing research, designing the MESIP principal leadership Behaviour Monitoring Questionnaire, and finally, establishing norms for this questionnaire which was designed for use by elementary principals who planned to implement a curriculum innovation. The questionnaire was used by the principal as, a self-measure, and also was used by the principal's faculty to report their perceptions of the principal's leadership behaviours. These behaviours, measured by six scales on the questionnaire, were those cited in the literature as being related to success in the implementation of an innovation. They were : initiating structure, consideration, principal task orientation, principal authority-participation orientation, teachers' morale and teachers' professionalism. The first four referred to the

the principal leadership behaviours while the last two dealt with the effects of principal leadership behaviours on teachers.

From the study interpretative material was prepared so that an individual principal is able to monitor his leadership behaviours as well as the educational climate in his school. By referring to norm scores the principal may assess the situation within his school.

The norms established fell into two categories. The first was 'real versus ideal' differences where the real situation, as perceived by the faculty, was compared to the ideal situation, also as perceived by the faculty. The magnitude of the difference allowed was a major consideration since previous research indicated that a difference between real and ideal means exceeding .40 was very often statistically significant. The results of the study indicated that a .40 difference is important and cause for concern. The second category established desirable upper level norms for each of the six scales. In order to formulate the upper level norms, grand mean scores from the total sample, an innovative group and upper quarter groups were examined.

It is anticipated that through the use of the Principal Leadership Behaviour Monitoring Questionnaire an elementary school principal will be assisted in making his school a more promising site for curriculum innovation.

The study deals with instrumentation for teachers as well as the principal. The present study undertaken by the investigator also deals with constructing instrument for teachers to measure their innovative proneness. The same tool will also be useful for locating the cases for 'innovation dissonance' which can be explained as attitude-behaviour discrepancy manifested by the teachers towards innovation.

Benedelto (1977) examined the relationship between the amount of self-adoption of the 'Interning for Learning Procedures' (as an Innovation) and the following independent variables : (i) supportiveness of the principal ; (ii) characteristics of intern-adopters; (iii) percentage of intern-adopters; (iv) interpersonal contact concerning interning for learning ; (v) budgetary allowance for learning station materials and (vi) tangible incentives. Since the primary reason for conducting this investigation was to predict the amount of self-adoption from a knowledge of six independent variables, a multiple regression procedure was

utilized at the school level. The findings indicated that there was no significant correlation between self adoption and the independent variables. From the further findings it was concluded that the following variables do not accurately predict the amount of self-adoption of the Interning for learning procedures : (i) supportiveness of the principal ; (ii) selected characteristics of intern-adopters, (iii) percentage of Intern adopters; (iv) number of opportunities for interpersonal content concerning Interning for Learning; (v) budgetary allowance for purchasing learning station materials and (vi) number of tangible incentives.

Thus the main focus of the above study is the self-adoption of the innovation and its relation with other six external factors that failed in this study to boost up the self-adoption of the innovation. Self-adoption thus is an inner urge and it has nothing to do with other incentives. It is also observed on the bases of the findings of other researches that the administrative support and climate in the institution do create influence on the behaviour of the teachers with respect to innovations to be adopted in the school. The present investigator has constructed and standardized the tool to measure the innovative

proneness of teachers of the secondary and higher secondary schools. The Innovative Proneness Scale (IPS) developed by the investigator measures the attitude of the teachers towards innovation, the behaviour of the teachers when they are asked to put particular innovation into practice and their change related values.

Stegmeier's (1977) dealt with determining and comparing administrator group perceptions concerning the (i) importance of certain selected innovations ; (ii) factors that are most inhibiting to the development of these innovations, (iii) strategies that are most effective for overcoming factors perceived as most inhibiting to the development of these innovations. The questionnaire was constructed to elicit needed information from respondents, content validity and instrument reliability were established for the questionnaire. The study resulted in important findings and conclusions (not available in the Dissertation Abstracts International which is the original source for the present investigator) concerning the following items : (i) characteristics and backgrounds of respondents; (ii) operational status of the specified innovations in Nassau County Elementary schools as perceived by respondents ; (iii) perceptions

of respondents concerning the importance of the specified innovations for their elementary schools ; (iv) the extent of agreement between the respondents of paired respondent groups concerning the importance of the specified innovations for their schools ; (v) factors the respondent groups perceived as most inhibiting to the development of each of the specified innovations, (vi) the extent of agreement between the responses of the paired respondent groups concerning the factors perceived as most inhibiting to the development of each of the specified innovations ; (vii) strategies the respondent groups perceived as most effective for overcoming the factors they perceived as most inhibiting to the development of each of the specified innovations; and (viii) the extent of agreement between the responses of paired respondent groups concerning the strategies perceived as most effective for overcoming the factors they perceived as most inhibiting to the development of each of the specified innovations.

The tool constructed and standardized by the present investigator deals with the finding out innovative proneness of secondary and higher secondary school teachers. The same tool can be used to find out attitude-behaviour discrepancy of the teachers in the context of innovative practices to be adopted.

It has been observed that many innovations adopted and even more not adopted ever that past few years. What differentiates the successful from the unsuccessful ?

Research has been conducted on the perceived attributes of adopted innovations in disciplines outside of education, but little has been completed on educational innovations.

The main purpose of Stewart's (1977) study was to examine a knowledge diffusion context the applicability of the perceived attributes of adopted innovations in other discipline to adopted innovations in education. His research hypotheses were : (i) the relative advantage of a new idea as perceived by members of a social system is positively related to adoption; (ii) the compatibility of a new idea, as perceived by members of a social system is positively related to adoption; (iii) the complexity of an innovation as perceived by the members of a social system is inversely related to adoption; (iv) the triability of an innovation as perceived by members of social system is positively related to adoption; (v) the observability of an innovation, as perceived by members of a social system, is positively related to adoption. The main results of the investigation are : (i) four of the five attributes were not applicable to educational innovations as presented. The only attribute

which applies to education as it does to other disciplines is complexity ; (ii) several sub-attributes were found to be important in the adoption of educational innovations ; (iii) several sub-attributes appeared to have opposite effect on educational innovations as did on innovations adopted in other disciplines ; (iv) the sub-attributes which were found to be important in the adoption of educational innovations should serve as a base for the development of a new set of attributes based on educational research.

The present investigator has taken care of complexity and compatibility of innovations in the instrument constructed and standardized by them.

Brown (1977) investigated the source of pressure for innovations in the public schools. An analysis of school level data indicated that extra organizational pressure, mostly from parents, is related to school innovation.

Organizational output variables such as word knowledge, self esteem, and school anxiety were not associated with school innovations.

It is possible that, though, teachers are not ready for innovation or say the attitude is not in favour of innovations, they have to put particular innovation into

practice due to certain organizational pressures. This type of cases are clear evidences of innovation dissonance.

It should be remembered that formation of a favourable or unfavourable attitude toward an innovation does not always lead directly or immediately to an adoption or rejection decision. Nevertheless, there is a tendency in this direction, that is, for attitudes and behaviour to become more consistent. Innovation dissonance is the discrepancy between an individual's attitude toward an innovation and his decision to adopt or reject the innovation. Innovation dissonance is a specific type of cognitive dissonance and Festinger (1957) says that there is pressure in the direction of dissonance reduction. The psychological state of dissonance is uncomfortable, and therefore individuals seek to reduce this tension by bringing their attitudes and their actions into line. Attitude toward an innovation at the persuasion stage in the innovation - decision process is generally (but not perfectly) predictive of a decision to adopt or to reject. Rogers and Shoemaker (1971) further say that human behaviour change is motivated in part by a state of internal disequilibrium or dissonance, an unfavourable state of mind that the individual seeks to reduce or

eliminate. When an individual feels dissonant, he will ordinarily be motivated to reduce his condition by changing his knowledge, attitudes, or actions.

The tool (IPS) that has been developed by the present investigator can help in locating Innovation-consonance and Innovation-Dissonance cases in the schools. To locate these type of cases and to know the reasons of their dissonance or consonance a separate study is necessary. This is not in the perview of the present study that is being reported.

The first purpose of Nunez's (1977) study was to determine the relationship between the simultaneous action of six teacher variables and teachers' perceptions of the effects of an innovative programme. A second purpose of study was to determine if a similar relationship existed between the individual variables and teachers' measured perceptions of program effects across two innovative programs.

The sample consisted of 277 teachers randomly selected from six designated experimental schools and from eight other schools in an urban South Texas school district. The teachers were employed in the district during the spring semester of 1976 and represented every elementary grade level and every middle and secondary department area.

A seven-item questionnaire was used to measure the subjects' perceptions of the effects of the innovative programs. On a Likert Scale the sample indicated the extent they agreed with the possible outcome posed by each item.

In the first phase of the study of the subjects were asked to complete a questionnaire measuring their perceptions of the effects of a first innovative program. The procedure was repeated for the second phase of the study when the sample recorded their perceptions of the effects of a second innovative programme. Individual teacher variables of sex, ethnicity level and subject taught, familiarity with the programme and employment in an experimental or other school were noted.

Parson's Product-Moment correlation was used to correlate the teacher variables to the total perception score. A regression procedure was then used to determine the relationship of the teacher variables acting simultaneously in the total perceptions score. The significance of this relationship was determined by an F-test procedure. Those same statistical procedures were then applied to the data pertaining to the second innovative program.

From the results of the study it appeared that the simultaneous action of the teacher variables was not a significant predictor of measured perceptions of the effects of the first innovative programme. Although the sex variable was significantly correlated to perceptions, the combined teacher variables acting simultaneously did not account for a significant proportion of perception score variance pertaining to the first innovative programme.

Investigation of the relationship between the individual teacher variables and the total perception score for each innovation revealed that the same variables were not consistently related to perceptions. Whereas sex was the only variable significantly related to perceptions for the first innovation, subject and the familiarity were significantly related to perceptions of effects of the second programme.

The investigation that is being reported has studied the Innovation proneness in the context of the teachers' variables.

The purpose of Kurutz's (1977) research was (a) to determine if a perceived need for organization change in

clinical psychology graduate training may be a familiar (b) to determine apparent practical merits for possible organization change by APA - regional relationships, and (c) to provide an analysis of the research results towards managing organizational change and academic innovation for clinical psychology graduate training. Against this background of purpose in organizational structure as perceived by clinical psychology faculty, this study produces evidence for the reader where organization change and academic innovation in clinical psychology graduate training is concentrated. In addition, several principal forces motivating these changes were identified.

The Institutional Goals Inventory, including items relating to organization change goals, was administered to a sample of 257 full-time clinical psychology faculty members in 35 randomly chosen academic departments of higher education throughout the country. Participation was voluntary and resulted in a 51-8 percent response rate. One-way analysis of variance was employed to test each of the six hypotheses based on both current and optimum goal responses. This resulted in twelve hypotheses to be tested.

By weighing the data to correct for slight disproportion in APA - regional response, each of the hypothesized independent variables was shown to make a statistically significant difference in attitudes on organization change goals for clinical psychology graduate training. Of the twelve hypotheses, nine were not rejected. Clinical psychology faculty who favour current and optimum goals on academic freedom, democratic governance, innovation, and accountability favoured current and optimal organization change goals in clinical psychology graduate training. Also, Junior faculty members were in favour of optimum organization change goals. Three hypotheses were disconfirmed. Senior faculty members were found to be more in favour of current organization change goals than their junior colleagues, and respondents in geographic regions where there is a low density of clinical psychology faculty were found to be more in favour of current and optimal organization change goals than respondents in highly populated regions.

The results of possible organization change and academic innovation as perceived by clinical psychology faculty in this study are seen to be optimal institutional goals for organization restructuring. The enhanced readiness of clinical psychology faculty for organization change shows not only unfulfilled benefits for clinical psychology graduate training,

but vigorous readiness for future growth among all clinical psychology faculty ranks. Law faculty density APA - regional favour of current and optimum organization change goals can be seen as a solution to existing organizational difficulties not being experienced by highly populated regions were changed, has already taken effect in several instances.

To implement the institutional goals identified in this study as current or optimal would require inputs *i* on the problems of inducting organization change into any one existing institution of higher education. Extensive opportunities should be provided for free and guided group discussion among administrators and clinical psychology faculty themselves. The challenge will be to organise the great potential of restructuring the organization of clinical psychology graduate training and to create organization circumstances that will utilize rather than defeat the very qualities which make this graduate training process so valuable to our society at large.

This is a unique study. Its uniqueness lies in studying the awareness of organizational goals in the faculty members and their reactions and opinions about the change in these goals. This type of study may help in maintaining the health

of the organization and in increasing its innovativeness. Healthy organization increases the innovativeness in its members.

The case study by Bell (1977) examines the various efforts for undergraduate curricular reform and innovation at one institution of higher education, the university of Houston. It analyzes the process of change by examining various competing theories from the individual, structural, and environmental perspectives. It is set in two contexts: (1) the context of higher education curricular reform throughout the country over the past 15 years; and (2) the context of the specific evolution and development of the university of Houston during that time. Five selected programs provide the core of the analysis : (1) University Honors Program ; (2) Co-operative Education Program; (3) Open University; (4) Ethnic studies Programs; and (5) PROMES (PROGRAM FOR MINORITY ENGINEERING STUDENTS. The study concludes with a set of recommendations for the management of undergraduate innovation and an agenda for potential future programs.

The programs were chosen on the basis of several criteria : (1) internal and external identifiability; (2) persistence over a period of several years; (3) academic credit base; (4) interdisciplinary approach; and (5) orientatio

towards special subgroups of students. The analysis and findings of this study were based upon two principal sources of evidence; written evidence refers to all of the relevant documents that provide insights into the course and status of the programs including annual reports, budget documents, statistical analysis, external services, mission statements, correspondence, descriptive and promotional literature, and course offerings and enrolments. The second source, oral evidence, consisted of 22 taped interviews that were conducted by the author. The interviews sought to determine the importance of five primary factors :

- (1) Leadership and support from key administrators;
- (2) Structural and budgetary considerations, (3) Impact of the reward system ; (4) Congruity with the university's overall educational mission; and (5) Environmental influences.

The analyzing the programs collectively, several observations are pertinent : Of all the factors that impinge upon curricular innovation, those with economic or financial implications exert the greatest influence over the activities of academic units and the behaviour of individuals within these units. This includes several dimensions : (1) The absolute level of financial resources available to the program;

(2) the leverage provided by funds that derive from sources other than the general university fund ; (3) the careful attention paid by all levels of the university to enrolment patterns, due to the direct linkage between the generation of semester credit hours and the subsequent general revenue appropriation from the state, and (4) the institution's reward system or incentive structure, and its perception by rank-and-file faculty members, as a powerful determinant of individual behaviour. In regard to this final point, despite public statements that imply the co-equal status of teaching and research productivity through scholarly publications is the primary criterion for professional advancement.

To bring to other factors, the role of the top academic and administrative leadership is quite properly limited to supportive and coordinative roles rather than direct intervention.

These individuals exert three types of influences :

(1) budgetary support; (2) Public statements of support and (3) the power of private persuasions by and large, however, curricular innovation of the University of Houston is a decentralized operation. In the realm of external influences,

the most powerful were found to be external funds, legislative interest, and student demand for certain programs. Finally, regarding the issue of congruity with the University's overall educational mission, there was strong sentiment for the legitimacy of each of these programs because they meet the diverse needs of the various subgroups that constitute the student body. Consonance with mission, however, does not imply high priority, and there was considerable agreement that innovative programs comprise an outer ring of pursuits, for which the core is the traditional programs of the academic departments.

Most of the studies reviewed in this chapter are survey type of study. The study that has been reviewed above opens new horizon for research methodology. The research can take up only one institution and only one innovative practice institutionalized. Hence the importance of the study is implicit in its case-study method of research.

The purpose of Lawlor's (1977) study was to determine if a relationship existed between theoretical variables taken from the literature on prediction of innovation and social studies teachers' use of new curriculum materials. Specifically, the investigation identified eleven independent

variables associated with teachers' acceptance of innovation and change : participation in planning and development, cosmopolitaness, confidence in leadership, knowledge of innovation, attitude toward risk-taking, opinion leadership, disposition toward education, years of teaching experience, assigned teaching level, age, and school system. These eleven variables were analyzed for their relationship to three dependent variables : teachers' use of Triecounty social studies resource units, students' opinion of teachers' use of Tri-county social studies resource units and supervisors' opinion of teachers' use of Tri-county social studies resource units.

The population of this study consisted of 525 social studies teachers drawn from three Maryland Public school systems.

Social studies teachers grade 1 through 12 were administered a questionnaire to determine their disposition on eleven theoretical variables and their use of newly developed social studies resource units. Randomly selected students and appropriate social studies supervisors were administered separate questionnaire to

determine their opinion of teachers' use of social studies resource units.

Data analysis utilized SUMSCORE and BMDs & D programs, which generated alpha coefficients for scale reliability and Pearson Product-Moment Correlation coefficients. t-tests were conducted to determine significance of null hypotheses.

Research findings showed that 14 of 33 null hypotheses were rejected at the .05 level of confidence, indicating selected theoretical variables served as a predictor of teachers' use of social studies resource units.

The eleven theoretical variables were most related to the dependent variables, teachers' use of resource units. Six variables : Participation in Planning and development, cosmopolitaness, confidence in leadership, knowledge of innovation, attitude toward risk-taking and opinion leadership were significantly related to this dependent variable.

Five variables : Participation in planning and development, confidence in leadership, knowledge of

innovation, disposition towards education and assigned teaching level were significantly related to the dependent variable, supervisors' opinion of teachers' use of Tri-county social studies resource units. Two of these variables (disposition toward education and assigned teaching level) were not related to the previously mentioned variable, teachers' use of resource units, showed a relationship on three variables (cosmopolitaness, attitude toward risk-taking and opinion leadership) which were unrelated to the dependent variable, supervisors' opinion of teachers' use of resource units.

Three variables : Participation in planning and development, attitude towards risk-taking and assigned teaching level, were significantly related to the dependent variable, students' opinion of teachers' use of resource units. This dependent variable, however, showed no relationship to four of six and three of five theoretical variables that were related to teachers' use of resource units and supervisors' opinion of teachers' use of resource units and supervisors' opinion of teachers' use of resource units respectively.

One theoretical variable, participation in planning and development, was positively related to each of three dependent variables in the study. Three theoretical variables : age, school system and years of teaching experience, were unrelated to dependent variables in the study. Analysis of relationships between the three dependent variables showed that a positive relationship existed between teachers' use of resource units and supervisors' opinion of teachers' use of resource units.

Recommendations to Tri-county school officials were as follows : (i) A greater participation of teachers in the planning and development of social studies resource units is needed. (ii) A greater utilization of social studies teams at the secondary level and departmentalized and situations at the elementary level is suggested. (iii) Knowledge of curriculum change is directly related to participation in the planning and development of that change every effort, therefore, should be made to involve greater number of teachers in the curriculum development process. (iv) Increased efforts should be made to increase social studies teachers' confidence in Tri-county curriculum development leadership. (v) Attention should be given to the positive and negative ramification of social

studies resource units, when promotion and professional advancement is an underlying motive of teachers.

- (vi) Possible screening devices for identifying new teachers with positive attitude toward innovative curriculum ideas and teaching practices should be considered.
- (vii) Increased utilisation of 'seed' teachers (early adopters who influence others) as demonstration teachers and workshop presenters needs to be considered.
- (viii) Mechanisms for the promotion and exchange of ideas related to social studies curriculum and instruction, such as a regular 'Newsletter', need to be implemented.
- (ix) Mechanism for 'outside-system' awareness need to be provided.
- (x) Relationships with nearby colleges and universities should be developed, so that increased graduate course offerings in the area of social studies curriculum and instructional methods should be systematically made available to teachers.
- (xi) Opportunities for teachers' travel, both within country and overseas, should be encouraged and facilitated.
- (xii) Additional efforts must be made to involve greater numbers of secondary level teachers in planning and development process.
- (xiii) Encouragement of teachers to seek higher educational levels does not necessarily promote the utilization of Tri-county social studies resource units.

The investigator has, in his study that is being reported, taken care of 'Cosmopolitaness' and 'riskness' in the Innovative proneness scale for secondary and higher secondary school teachers, prepared by him.

Freund's (1978) research addressed itself to the identification of a possible variable related to the interaction of the principal and teachers which affects the successful implementation of an innovation. The variable considered was teachers' perceptions and expectation of the principal's Representational Role Orientation (RRO) as compared with his 'actual' RRO. The question investigated was : Does the congruence or lack of congruence between the principal's Perceived RRO (RROP) and expected RRO (RROE) by teachers (relative to community) bear any relationship to the Principal's Innovative Propensity (IP) ?

Two high IP and two Low IP schools were selected, based on the responses of thirty high school principals in Westchester county. The principal and a random sample of teachers in each school completed the IP and RRO questionnaires. Also, ninety five school, high school principals completed the IP questionnaire and fifteen

superintendents completed the innovation difficulty rating questionnaire.

The study showed an association between high Representative Role orientation consensus and Innovative Propensity. A factor analysis of the Innovative Propensity data revealed several very convincing factors, however, none could be associated with other high or low Representational Role orientation Consensus.

Representational Role Orientation Consensus may be of use as a predictor of the success or failure of an innovation by a principal. Its utility is as a general predictor and not as a predictor of the success or failure rate of a particular type of innovation. This study points to the need to re-examine role consensus. Role consensus must be broken down to its basic components. The consensus of different facets of a principal' role may have very different impacts on the functioning of his school.

The principal is a leader of the school. He has to initiate innovation in the school. Unless he gets cooperation and readiness on the part of his co-workers he cannot institutionalize any innovation. He has to manifest

particular type of behaviour so as to ascertain cooperation from the teachers. The leadership behaviour and Innovative proneness and Innovation Dissonance are to some extent related. Further researches are needed for this purpose.

The Purpose of Demos's (1978) study was to examine the difference between perceptions of teachers toward innovations and change in the Department of Defence Department Schools, Europe (DODDSEUR) which were offering good but traditional educational programs and the perceptions towards innovations and change held by teachers in schools which were considered making purposeful efforts to organize innovative educational programs.

A three-part questionnaire was used to ascertain :

- (1) the viewpoints of teachers regarding 45 statements about the introduction of new concepts, approaches, and techniques into schools and classrooms ;
- (2) teacher's preferences regarding twelve widely discussed and adopted innovations; and
- (3) pertinent information about the respondents themselves. The research population selected for this study consisted of 250 teachers from six secondary schools in DODOSEUR. Three schools were considered to have traditional climate and three schools had an innovative climate.

The major findings were : (1) Teachers gave their strongest endorsement to the following concepts : (a) teachers must have the support of the principal for successful adoption and implementation of innovations, (b) some specific inservice training is essential for any curricular change, (c) teachers who visit exemplary programs in other schools usually will try new approaches in their own classroom, and (d) community view exert a strong influence upon the school curriculum. (2) Teachers disagreed most with the following concepts : (a) men seem to be more open than women in their thinking about adopting educational innovations, (b) teachers who teach required subjects are less likely to innovate than the teachers of elective subjects. (3) Teachers gave the highest rating to such innovative practices as : (a) employment of paraprofessionals, (b) variations in use of time, (c) variable-sized grouping of students, and (d) team teaching.

The author concluded that : (1) teachers who receive the support of their principal do hold more positive perceptions toward innovation and change ; (2) teachers who take an active part in planning and development of the

of the curriculum hold perceptions which are more favourable toward adopting innovations and change ; (3) teachers who teach required subjects tend to hold the same perceptions of innovation and change as do teachers of elective subjects ; (4) teachers who visit innovative programs do become more positive in their views about introducing innovations and changes.

The researcher recommended that (1) the principal should support and encourage all who will be involved in a projected change ; (2) teachers should be provided the opportunity to visit other schools to assist them in modifying their instructional program as to learn about innovation; (3) schools making provisions to individualize instruction are urged to examine such innovation practices as : (a) employment of professionals, (b) variations in uses of time, (c) variable-sized grouping of students and (d) team teaching.

Yerys (1978) undertook a study to examine the relationship among organizational structure, teacher belief systems, and teacher perception of involvement in innovative activity. If schools are to be responsive

to engaging change in individuals and society, it is significant to determine what organizational and individual factors influence innovation behaviour. Examination of teachers' general involvement in innovative activity suggests a responsiveness and adaptability in terms of needs of students. The necessary data were collected from 395 teachers of 24 randomly sampled higher schools on Long Islands with the help of structure properties Questionnaire, the Rokeach Dogmatism Scale Form E, and Innovative Activity Instrument. In order to test the hypotheses, multiple regression analysis was used. A multi-dimensional treatment of organizational structure was provided by factor analysis of SPQ. Rokeach Dogmatism Scale score and each of the twelve factors of the SPQ were entered as independent variables on the multiple regression equation and regressed on Innovative Activity Instrument Score, the dependent variable.

Use of a multi-dimensional approach to organization structure allowed for analysis of specific structural properties in relation to involvement in innovative activity. In the centralization dimension (how power is distributed), referring non-routine decisions to higher ups for approval was significantly related to decreased involvement in

innovative activity. The hypothesized pattern of lower formalization (how rules are used) and increased involvement in innovative activity was not upheld by this data. In the complexity dimension (the degree of professional latitude and activity), a significant relationship between professional training required for occupational position and increased involvement in innovative was shown.

A significant relationship between teach open-mindedness and increased involvement in innovation activity was revealed by these data.

The relationship among organization structure, teacher belief systems, and teacher involvement in innovative activity was supported. This finding indicates that in a school organization which is perceived as less structured allows for distribution of power and decision making (progratives, flexibility in application of rules, and professionalism) and in which individual teachers are open-minded, those teachers are significantly involved in innovative activity. It may be noted that the variability of organization structural and dogmatism account for 9.9% of the variance in involvement in

innovative activity, suggesting a further explanation and testing to determine what other variables may account for the variability in involvement in innovative activity.

The author of the research study reviewed above has rightly suggested to study various other variables which may account for the involvement in innovative activity. The present investigator has tried to examine ten personal variables of teachers with the help of Innovative Proneness Scale divided by himself which consists 21 components distributed among four parts namely : (1) The Inventory of Attitudes to Innovation (I.A.I.), (2) The Situational and The Innovation Characteristics Scale (SICS) and (3) The Change-Related Values Questionnaire (CRVQ).

In the previous section a very brief review of the researches as reviewed by the foreign research workers in this area has been made. In the present section 26 foreign studies published in various volumes of Dissertation Abstracts International (1977, 1978) are reviewed and in the subsequent section Indian Studies are reviewed. The foreign studies reviewed above have provided very useful guidelines to investigator in pursuing his study.

2.5 Studies Done in India

Studies in this area in India is of comparatively recent origin. The centre of advanced study in Education, Faculty of Education and Psychology, The M.S. University of Baroda, Baroda, has identified the present area for intensive and sustained study in 1970. The section of this area for research had certain antecedents.

The post-independence era of Indian education has witnessed a number of efforts to bring about changes in the educational structure, curriculum, teaching methods. The Secondary Education Commission (1952-53) had come out with its recommendations about higher-secondary schools and multipurpose schools, dynamic methods of teaching, establishing guidance services. This was followed up by the establishment of All India Council for Secondary Education (AICSE) and its various programmes for improvement of secondary education. Some of the programmes initiated by SICSE were (i) extension services in schools, (ii) examination reform, (iii) improvement of science education, (iv) experimentation by teachers. In 1961, NCERT was established and its various departments became the sources of innovations in school education. In 1966, the Education

Commission (1964-65) recommended a number of measures for improvement of school education, work experience school complex, institutional planning. The recent trend that is in vogue is the socially useful productive work. This represented the efforts from the Central and State authorities to bring about change in education. To give administrative support to spread of this new ideas, new structures were created at the state level. These are S.I.E.S., State Evaluation Units, State Boards of Teacher Education and very recently instituted in some states State Council of Educational Research and Training (SCERT).

Inspite of these multiranged approaches to bring about changes in school education, it was being felt that the schools were not changing appreciably. Innovations that germinated from the centre got diluted by the time they reached the schools, some of them even got distorted and quite a few of them did not reach the schools. Further, when the programmes of extension centres in the country were evaluated in 1964 and when a stock taking national convention was held to review a decade of educational extension in the country in 1965 it became very clear that there was a need to inquire into the change process in

Indian schools. It was clearly expressed that the impact of a number of new programmes was not commensurate with the input in terms of resources and human efforts.

Although it was felt and expressed that the pace of change in Indian education was alarmingly slow and there was no planned attempt to study the process of educational change, either in Indian Universities or in research organizations. A very modest effort was initiated by the NCERT in identifying innovative practices in secondary schools and discriminate them through seminars.

The NCERT organized the first seminar on educational innovation and their diffusion in 1967 at Hyderabad. The participants of the seminar were from Departments of Education, Psychology, Sociology and other such bodies as the National Institute of Community Development, Gandhian Institute, etc. The deliberations of this seminar resulted into creating the needed awareness to take up investigations into the process of educational change in schools.

After Hyderabad seminar, three studies were undertaken in Indian Universities in the area of factors influencing the diffusion of innovation in Indian School, Sardar Patel

University approached the U.G.C. for financial assistance to start a Centre for the Study of Educational Innovations. This was, however, not approved. By 1969, one study at S.P. University was completed and one at Osmania University was nearing completion.

It was in the background of these antecedent factors that the CASE (Baroda) took a decision to undertake systematic studies in the area of innovations and educational change process. Mukhopadhyay (1973) in the CASE, Baroda made an exhaustive review of the research studies in the diffusion of educational innovations in India. This review depicts the trend of researchers' selection of variables, research design, instrumentation, sampling statistical procedure and lastly findings.

In India, very little work has been done in the field of diffusion of innovations. Most of the agricultural colleges have conducted few diffusion studies at post-graduate level. Some amount of work has also been done at Indian Agricultural Research Institute. Pareek in his directory of 'Behavioural Science Research in India' has compiled nearly one hundred and fourteen studies in the area of adoption

and diffusion of innovations from the year 1925-55. The review shows that all the researches are done in the area of agriculture. Most of the researches have tried to find out the characteristics of the adopters of the improved agricultural practices. However, the first remarkable effort in education in India was the organization of a seminar on the innovation and diffusion in 1966 at Osmania University. The seminar had been followed up by research studies at various levels.

The first research study in this area has been conducted by Rao (1967). This is an extensive survey of the innovation being floated, their sources, the main point of focus has been to find out the factors contributing and inhibiting the diffusion process, he came out with the findings that more innovative schools have better facilities, more audio-visual aids, special room (subject room rather than classroom), books and magazines for students and teachers. In Indian education, various educational as well as non-educational agencies have been found to be active. But in innovation diffusion that number is limited. The major such agents or sources as Rao's (1967) study reveals are Department of Extension

Services of the Teachers Training Colleges, Head Masters, Seminars, Workshops, Inspectorals books, magazines, visits to other institutions and other country, visitors, experts, State Department of Education, State Evaluation Unit, S.S.C. Board, Employment Bureau, Research Laboratories, Universities, Scientists, Head Masters Association. As far as organizational factors are concerned, Rao's (1967) study reveals that single sex institutions are more innovative than co-educational schools. Schools with higher class teachers ratio, students strength between 500 and 750 and under the management of university, missionary and industry are more innovative. He found that higher secondary and multipurpose schools are more innovative than ordinary high school. He also found that academic and professional qualifications of the head master influence the diffusion process whereas Buch (1972) found no relationship between qualification of the teacher and adoptability of the school. He found that the school with more trained, qualified, cosmopolite staff are more innovative less turnover in staff, more interstate and country visitation of the staff with special abilities and possessing more professional behaviour are conducive to diffusion of innovation. The staff of more innovation schools are better.

qualified and trained. Age of the staff is not significantly related to innovativeness of the school system. Among important inhibiting factors towards innovativeness of the school system are rigid, Government rules about syllabus and text books. Inadequate grants, too much of office and organizational work on the part of the principal, less equipped on the part of the staff and pupils from backward classes, over crowded classrooms etc.

Bhogle (1969) mainly intended to study the psychological and organizational co-rrelates of innovation acceptance. This is one of the earliest attempts of India to study the mechanism of educational change. She found that cosmopolitaness and age of teachers are significantly related to acceptance of innovation. She also found that the innovations of science club, deputation of teachers to refresher courses and teaching with audio-visual aids were introduced as they were more compatible, more divisible and less complex than the innovation of improvement of school library and child guidance clinic, she reveals that there is no relationship between adoption of innovation by the headmaster and the teachers of the

same school, The school with high adoption rank have low ranks on teachers' acceptance.

Bhogle (1969) found that headmaster having democratic and favourable attitude towards teaching, more experienced, drawing higher salary, having low rate, conflicts are more innovative. Older the head more adoptive he is. She showed that cosmopolite and older teachers are prone to accept innovations. Large and multipurpose schools are more adoptive. Thus, it was established that acceptance, is also an institutional factor, influenced more by the personality of the headmaster and principal than the teachers. The headmaster's leadership style is a decidence factor in the process of diffusion of innovation or otherwise.

Bhogle (1969) have concluded that the individual's experience in the profession and his innovativeness have sufficient positive relationship.

With a view to finding out innovative practices and analysing factors affecting innovations leading to change, Zavery (1969) observed in the progressive schools in Kaira District of Gujarat that even though various

types of difficulties were faced by the change-agents, they tried to face resistance bodily. The resulting change was welcomed by teachers - as it finally developed team spirit, built up school climate and created convictions. The teachers liked and welcomed change as the change helped them to develop new value systems and provided opportunities and challenges to them. She further observed that innovative practices are adopted in the area of teaching practices, examination, curricular activities, school management, the head master and social relation, the school building, teaching-learning process, and co-curricular activities.

A study of M.B. Patel College of Education of Sardar Patel University, Vallabh Vidyanagar, Gujarat (1972) collected thirtyseven innovations under broad heads of school administration, school organization, curriculum, classroom teaching, examination and physical education and co-curricular activities being practised in secondary schools of Gujarat. This was a project to study the different areas of innovative categories. This was more or less a survey type of research, more so it was a descriptive survey. The study conducted in the area did not deal with the teacher attitude or their psychological

reactions towards the change. A few interesting findings were that headmaster's leadership style, financial position of the school and value system of the institution influenced the diffusion process.

Rai's(1972) study concentrated completely on teachers' characteristics and its relationship with innovation acceptance by teachers. She studied thirty different aspects of teachers under the several heads, namely demographical variables, institutional category, communication behaviour, psychological and personality variables, socio-economic status and organizational climate. Rao (1967) and Bhogle (1969) also high-lighted some of the other aspects of teachers' characteristics influencing diffusion process. Rai (1972) studied the impact of thirty variables on four criterion variables, the four dimensions of diffusion of innovation. It focussed mainly on the characteristics of teachers that are associated with the 'time of awareness' of an innovation, 'the time of adoption', 'internalisation' of an innovation, and 'the process of self-perceived change orientation'. A few interesting features were that there was no variable amongst the thirty which was a common

predictor for all the four criterion variables. Teachers' educational qualifications, recency in training, perceived psychological distance between self and principal, perceived frequency of general horizontal communication, professional orientation, and conservatism v/s radicalism had no influence on innovation diffusion. In stepwise regression, it was found that self-designated opinion leadership, exposure to wider environmental, general mass media exposure, age, socio-economic status, teachers' perception of students' attitude towards the innovation, perceived principals' support of the innovation, perceived frequency of historical communication about the innovation, perceived change orientation of the principal together yielded R value of 0.3753 explaining 14.09 percent variance in time of awareness. In case of time of adoption, perceived frequency of horizontal communication about the innovation, professional communication behaviour, described opinion leadership, feeling of security, cosmopolitaness, sex, age, vertical communication, self-designated opinion leadership, urban and rural background, and attitude towards the teaching profession yielded an R of 0.3413 and this explains 11.65 percent of variance, seven variables,

viz., teachers' perception of students' benefit from the innovation, perceived change orientation of the principal, ascribed opinion leadership, perceived cohesiveness of the school faculty, organizational climate, the satisfaction and need for autonomy gave an R of 0.5964 with the criterion variable internalization explaining, 35.57 percent of variance. With self-perceived change orientation, six variables are significantly related.

These are perceived change-orientation of the principal, teachers' perception of students benefit from the innovation, socio-economic status, perceived principals' support of the innovation, perceived source credibility of the principal and perceived psychological distance between other teacher and the principal, which together yielded an R of 0.5017 to explain 25.17 percent variance of the criterion.

Eight predictors of the total score of all the four criteria variables are perceived change orientation of the principal, teachers' perception of students' benefit from the innovation, ascribed opinion leadership, cosmopolitaness, socio-economic status, teachers' perception of the students' attitude towards the innovation, experience, and general

mass-media exposure, together they yielded an R of 0.5655 and explain 31.98 percent of variance in the diffusion process within the school system.

Based on the findings it is suggested that opportunities for exposure to wider environments such as attending conferences, meetings, meeting people outside the social system, travelling, and opportunities for interaction between teachers and principal should be created. Rai (1972) found that more experience is the teacher, earlier he comes to know about innovation, adopts them earlier, more is the internalisation and perceives himself as more change oriented. Thus, it was established that the teaching experience of the teacher does help in the diffusion of an innovation process within the school system. Mass-media channels in education should be strengthened. Administrators should realize their important role of acceptance of change in general and support such innovation in particular. In order to increase the acceptance of innovations by teachers, friendly atmosphere in the school should be created. Acceptance of change by the principal should ^{be} demonstrated. In order to accelerate internalization process teachers should be given autonomy in decision making. For a rapid diffusion of innovation with a school system, opportunities

should be created for teachers to expose the students to the innovation by seeing their benefits, encouragement for trying out new ideas should be given by administration. Principal need to be aware of their role as a source of information for teachers. To accelerate the diffusion process within a system exposure to mass-media channels and wider social environment is of utmost importance.

The major study on the headmasters' personal and attitudinal aspect is by Buch (1972). Her efforts have been centred round finding out the conditions that promote adoptability in Indian schools. The investigation is mainly concerned with the principals' characteristics as related to school adaptability. She found no relationship between school adaptability and variables like : experience, long duration of service in the same school and role satisfaction of the principal. However, out of forty-nine variables studied, only thirteen variables have been found to be predictors of school adaptability yielding an R of 0.7536 and a variance of 56.8 percent. These variables are interschool visitation, self-rated administrative ability. Parents' involvement, professional meetings attended, feeling of security, training college

support of innovation, teachers' rating of administrative ability, community involvement, equilateral relationship with training college personnel, interest of the management, self-rated administrative ability, and cosmopolitan orientation. It was also found that step-wise regression and the addition of any variable after the first five does not increase the multiple R 0.7277 significantly and hence the first five out of these eleven variables are the best predictors of school adaptability.

Buch and Buch (1973) conducted a study on change in secondary schools of Gujarat. The major focus on the areas of change are curriculum reconstruction, adoption of new methodology of classroom teaching, examination and evaluation, vocational guidance, teaching, training, etc. The study by these two researchers located thirty innovations scattered over various fields of education being implemented in Gujarat secondary schools. Amongst them ^{were} weekly and periodical test, regular staff meeting, internal assessment and distributed weightage to tests. They found an order of strength in training college personnel, seminar, Department of Extension Services, Director of Education, and journals, that act as powerful source of innovations.

Buch and Buch (1978) found in their survey study that experimental attitude of headmaster, academic interest of schools and the authority dictation are major promoters of innovation - diffusion. The reasons for not introducing an innovation are teachers' attitude (negative) and lack of efficiency, shortage of funds and non-availability of resources (academic) and that of discontinuance of an innovation are transfer of teacher incharge. Loss of interest of teachers', loss of zeal, found to be more time consuming than expected and burden-someness on the part of the teachers.

Bhagia (1973) studied the perceived characteristics of innovation as related to their diffusion in schools of Gujarat. She found that in a perception of twenty specific characteristics are significantly related to diffusion of innovation in general. There are academic effectiveness, complexity, diversibility, efficiency, facilitation, meaningfulness, punctuality, prestige, relative advantage, structuralisation) all are significant at .01 level) and communicability (significant at .05 level). Doctor (1973) also studied about factors affecting the diffusing process.

Mukhopadhyay (1973) studied the resistance to innovation. He found that the administrative bureaucracy at the governmental level is a potent resistance to educational change. The system is indifferent to clearly define the role of the District Education Officers/District Inspectors of Schools supplemented with almost unbearable administrative burden and lack of academic freedom, one other hindrance in innovation - diffusion. Of course, the non-enthusiastic, non-professional life of the education officer are not less important. The district level officers have more authority figure than and academic leader image amongst the principal and teachers.

Dave's () study of curriculum change in secondary school found that local autonomy, contact and guidance of Extension Services Departments, principals' leadership are the most powerful facilitating factors than availability of material and technical aid, teachers' workshop and foreign experts. He also found that agencies such as teachers colleges, educational inspectors and foreign experts did not seem to have played a significant role in bringing about education at change.

Pillai (1973) tried to find out the relationship between organizational climate and staff morale and innovativeness of the school and pupil performance. She found that openness of climate and higher staff morale are significantly related to school innovativeness and pupil performance. The relationship between teacher morale and innovativeness in this study inspired Agrawal (1974) to repeat the study of relation between teacher morale and innovative proneness.

Agrawal (1974) concentrated on the innovative proneness of secondary school teachers with a view to finding out whether there were certain other characteristics of the teachers which were related to their innovative proneness. Her's is a correlational and prediction study of 15 variables, namely, age, educational qualification, recency in training, mobility, sex, and teacher morale which includes ten factors, namely, teacher rapport with principal, satisfaction with teaching rapport among teachers, teachers' salary, teachers' load of work, a curriculum issue, teacher status, community support of education, school facilities and services and community pressure, which were studied of their relationship with innovative proneness as

the criterion variable. To collect the necessary data from so randomly selected schools from Gujarat, she adopted Millers' inventory on change proneness to measure the innovative proneness of teachers, 224 teachers of randomly selected school responded the inventory. In this study, Agrawal (1974) found that : (i) mean score of the innovative proneness of male teachers was higher than that of the female teachers ; (2) mean score of twelve independent variables of male teachers was higher than that of female teachers (3) mobility, the independent variable was significantly related at .01 level for the whole group. (taking sex-wise) the mobility of male teacher was significantly related at 0.05 level with the criterion variable whereas the mobility of female teachers was not related at any level : (iv) four independent variables, namely, age, sex, educational qualifications, and recency in training did not have significant relationship with innovative proneness : (v) the correlational analysis revealed that the ten dimensions of teachers' morale were significantly related to the innovative proneness at .01 level : (vi) the six variables, namely, teacher rapport with principal, satisfaction with teaching

teacher salary, communicative support of education, school facilities and services and community pressures, predicted upto 72.3 percent of the total variance of innovative proneness.

✓ 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 of school principal, found that most of the schools having high innovativeness have principals manifesting high 'initiating structure' and high 'consideration (HH pattern)' and the principals manifesting high 'initiating structure' and low consideration' (HL pattern), whereas the schools with low innovativeness have principals manifesting low 'initiating structure' and 'low consideration' (LL pattern) of leadership behaviour and the principals manifesting low 'initiating structure', and high 'consideration' (LH pattern of leadership behaviour of the principals.)

The main objective of Panchal's (1977) study were :

- (i) to design and validate an Innovative-Proneness Scale (I.P.S.) that will measure Innovative Proneness of Teacher Educators of Secondary Teachers' Training Colleges of

Gujarat ; (ii) to study the Innovative-Proneness of the Teacher Educators of Secondary Teachers Training Colleges of Gujarat; (iii) to find out whether there are certain other characteristics of the Teacher Educators which are related to their innovative proneness; and (iv) to study the factor analysis of the scale developed by the author.

The entire forty secondary Teachers Training Colleges of Gujarat were selected for the necessary data collection. The innovative proneness scale standardized by the author which consists 150 items - 30 items in section I, and 60 items in II and III section, was employed to collect opinions and feelings of 250 teacher educators about innovations and other allied aspects. The data thus collected was computerized to study : (i) the mean scores of the Innovative Proneness and its twenty one components; (ii) the Innovative Proneness Scores of Teacher Educators according to teacher educators' age, sex, experience and professional qualifications, (iii) the factor analysis of the prepared scale.

The major findings of Panchal's (1977) study are as given below :

Major Findings

This section gives the summary of the major findings. The purpose of the present study was to measure innovative proneness of teacher educators of secondary teachers' training colleges of Gujarat. For that, the investigator constructed and standardized the inventory to measure innovative proneness of teacher-educators.

(A) The following were the major findings of the Tool Construction :

1. After studying the various definitions of innovative proneness as given by the experts, the investigator determined twentyone components under Section I, II and III.

The seven main components of innovative proneness of Section I - The Inventory of Attitude to Innovation are : Individualization, Curriculum Organization, Teaching-Learning Process, Teaching Resources, Internal School organization, Staff Development and School Community Relationships.

The eight main components of Section II - The Situational and Innovation Characteristics are : Administrative Support, Staff Norms, System Norms, Complexity,

Compatibility, Riskness, Localiteness and Cosmopoliteness.

The six main components of Section III - The Change Related Values Questionnaire are : Traditionalism, Progressivism, Dogmatism, Venturesomeness, Conservatism, and Change Proneness.

2. The Validity of the inventory was found out by (1) The content validity as all the items of the inventory were based on the definitions of innovative proneness. (2) The ratings of principals were correlated with the ratings of the teacher-educators, and (3) item analysis was done by Phi-coefficient formulae. The Phi values of 200 items were ranging from .16 to .82.

3. The reliability of the inventory of Section I - The I.A.I. by Test - Retest Method is .89 and .90 obtained by Split-Half Method respectively. The reliability of the inventory of Section II - The S. & I.C. Scale was found to be .93 by Test-Retest Method and .95 obtained by Split-Half Method. The reliability of the inventory of Section III - The C.R.V.Q. was found to be .90 by Test-Retest Method and .92 obtained by Split-Half Method.

4. Norms in terms of Percentiles have also been worked out with respect to each component of Section I : The I.A.I., Section II - The S. & I.C. Score and Section III - The C.R.

Values Questionnaire respectively. (a) In Section I - The I.A.I., The Components - Individualization, Teaching-Learning-Process, Internal School Organization and Staff Development have the highest Percentile (25.0) and the component - School Community Relationships has the lowest percentile (9.0), (b) Section II - The S. & I.C. scale, Component - Staff Norms, has the highest Percentile (58.0) and the Component - System Norms has the lowest Percentile (8.0). (c) Section III - The C.R. Values Questionnaire - The Component - Traditionalism, progressivism and Change Proneness have the highest percentile (50.0) and the Component - Conservatism has the lowest percentile (15.0).

5. The factor analysis was done by principal component technique. Five factors were extracted out. The factors named were : (1) The situational and Innovation Characteristics, (2) Attitude of Innovation, (3) The Change Related values, (4) Change Proneness and Related values, and (5) Change Proneness and Progressivism.

6. All the twentyone components of 'Innovative Proneness Scale' devised and standardized by the investigator are mutually inclusive, cohesive and true to the purpose of the scale.

7. The teacher educators of Secondary Teachers' Training Colleges of Gujarat State have their mean scores as 126.18, 212.47, and 206.59 on Section I - The I.A.I., Section II - The S. & I.C., and Section III - The C.R. Values Questionnaire respectively.

On the basis of the tool constructed by the investigator, the following major results were obtained in the matter of innovative proneness of teacher-educators of Secondary Teachers' Training Colleges of Gujarat State.

(B) Innovative-Proneness - Agewise :

8. The Teacher-educators of Gujarat who are above 35 years of age are little bit more change prone than those who are below 35.

9. The age of Teacher-educator does not bear significant relationship with the components of 'attitude to innovation'.

10. There is no significant relationship between age of the teacher-educators and situational characteristics and the characteristics of innovation itself. Same is the case between the age and the components of these two aspects taken separately.

11. The age of the teacher-educators has nothing to do with the change related values taken together.

12. Increase in age increases conservatism.

(c) Innovative Proneness - Sexwise :

13. The sex difference does not show any significant difference to the attitudes of teacher-educators towards innovation.

14. Again there is no significant relationship between the sex and any of the components of 'attitudes of teacher-educators to innovation'.

15. Sex of the teacher-educators does not bear any significant relationship with either 'situational characteristics or and 'Innovation Characteristics', similarly it bears no significant relationship with any of the components of these two aspects.

16. The mean difference between the two sexes of teacher-educators in the context of 'Change related values and its components is significant.

(d) Innovative Proneness - Teaching Experiencewise :

17. There is no significant relationship between teaching experiences of teacher-educators and their

'attitudes to innovation'.

18. More experienced teacher-educators perceived the importance of 'teaching resources' at a higher altitude to innovation.

19. Teaching experience of teacher-educators does not bear significant relationship with the situational as well as innovation characteristics. Same is the case with various components of these two aspects taken separately.

20. Teaching experience of teacher-educators have nothing to do with 'Change related values and its components.'

(F) Innovative Proneness - Academic Qualificationwise :

21. The academic qualifications of teacher-educators bear no significant relationship with 'attitudes to innovation' taken as a whole.

Teacher-educators with B.A. degree manifest higher 'individualization' as compared with those having M.Sc. degree.

22. The teacher-educators possessing M.A. degree have significant relationship with 'situational characteristics' and 'innovation characteristics' taken separately.

23. There is a close and significant relationship between the teacher-educators possessing M.A. degree with 'administrative support', 'compatibility and 'riskness'

taken separately.

(24) The teacher-educators having M.A. degree are significantly related with 'change-related values'.

25. M.A. & M.Sc. teacher-educators have significant relationship with 'Progressivism', 'Venturesomeness', 'Conservatism' and 'Change Proneness'.

(F) Innovative Proneness - Foreign Visitwise :

26. Foreign visits by the teacher-educators bear no significant relationship with their 'attitudes to innovation'.

27. The foreign visits by teacher-educators is significantly related with teaching resources'.

28. The foreign visits and 'situational and innovative characteristics taken together do not bear significant relationship. Same is the case with various components of these two aspects.

29. The foreign visits by the teacher-educators do not have any significant relationship with 'Change related values' and its components.

(G) Innovative Proneness - Professional Qualificationwise :

30. The professional qualifications have nothing to do with 'attitudes to innovation' as a whole.

31. M.Ed. degree shows significant concern with 'teaching-learning process'.

32. The professional qualifications have no significant relationship with 'situational characteristics' and 'innovation characteristics' either taken together or taken separately.

33. The Ph.D. teacher-educators bear significant concern with 'riskness'.

34. The Ph.Ds. are significantly concerned with 'change related values', they are again significantly related with 'Progressivism'.

(H) Innovative-Proneness : The Mobility of Teacher-Educators :

35. The mobility has nothing to do with the 'attitudes of innovation' taken as a whole.

36. The mobile teacher-educators show significant concern with 'teaching resources'.

37. The mobility of teacher-educators has no significant relationship with situational and innovation characteristics

taken either together or taken separately; further it has also nothing to do with any of the components of these two aspects.

38. The mobile teacher-educators are more 'venture-some' and are more prone to change as compared to their immobile counterparts.

(I) Innovative-Proneness - Inservice Education of Teacher-Educators :

39. Inservice education of teacher-educators is significantly related with 'attitudes to innovation'.

40. Inservice education of teacher-educators shows significant concern with 'teaching-learning process', 'teaching resources' and 'school community relationship'.

41. Inservice education is significantly related with 'situational characteristics' and it is insignificantly related with the 'characteristics of innovation'.

42. Inservice education is significantly related with 'staff norms', 'system norms' and 'cosmopolitaness'.

43. Again, inservice education has shown significant concern with 'change related values'.

44. Lastly, inservice education is very highly significantly related with 'dogmatism and conservatism'.

(J) Innovative-Proneness - Reading Habits of
Teacher-Educators :

45. Reading habits of teacher-educators do not make any significant difference in the context of 'attitudes to innovation' and its components.

46. Again, it has nothing to do with 'situational characteristics and 'innovation characteristics' either taken jointly or separately.

47. Reading habits are significantly related with 'complexity' and 'compatibility'.

48. Reading of professional literature by the teacher educators, again, has nothing to do with 'change related values' and its components.

(K) Innovative Proneness - Professional Job Satisfaction:

49. Professional job satisfaction is not significantly related with 'attitudes to innovation' and its components.

50. Professional job satisfaction does not bear significant relationship with 'situational characteristics' and 'innovation characteristics' and with any of their components.

51. Professional Job satisfaction is highly and significantly related with 'traditionalism'.

Panchal's (1977) study is of special importance for the present investigator, as the study made by him is on similar lines. Panchal (1977) constructed a tool I.P.S. for Teacher Educators of the Secondary Teachers Colleges of Gujarat, whereas the present investigator prepared the Innovative Proneness Scale for Secondary and Higher Secondary School Teachers of Gujarat. Panchal (1977) studied the Innovative Proneness of 250 Teacher Educators according to their personal variables; whereas the present investigator studied the Innovative Proneness of 1000 Secondary and Higher Secondary School Teachers of Gujarat with respect to their personal variables.

Purushottam (1979) in his study of innovative educational institutions at secondary level found that (i) adequate goal focus in a system is able to bring an increased role awareness in the members of the system tending to make the system more dynamic; (ii) increased linkage with resource system makes the system more modern; (iii) higher is the frequency of contacts with as many outside persons and agencies as possible, more is

the cosmopoliteness and less is the localiteness in the system members, (iv) when the innovation-decision is made by the members of a system, there is higher rate of member-acceptance of these innovative ideas; (v) a tradition of collective innovation decision in a system tends to promote the innovation-acceptance among its members as against an authority decision; (vi) the schools having downward flow of direction from superordinates to subordinates, suffer a poor organizational health that results into frequent discontinuance of innovation; (vii) support from the administrative unit to the adoption unit promotes the rate of adaption of an innovation; (viii) resourcefulness of the headmaster in a system enhances his source credibility level among the headmaster of the adaption unit; (ix) a headmaster's client-oriented approach brings about source-receiver homaplicity in the system; (x) care to assess the 'relative advantage' of an innovative practice before suggesting it for adoption on the part of the headmaster averts dysfunctional consequences; and (xi) the success of change agents (the headmaster) is positively related to his efforts in increasing his clients' abilities to evaluate the innovative practice.

Putushottam (1979) has touched the Miles (1965) concept of organizational health. According to Miles (1965) in general terms, a healthy organization not only survives its environments but continues to cope adequately over the long haul and continuously develops and extends its surviving and coping abilities. However, in scanning Miles' list, we should point out that social psychologists have only begun in recent years to design instruments which can measure the presence or absence of these properties : Goal Focus, Communication Adequacy, optimal power Equalization, Resource Utilization, Cohesiveness, Morale, Innovativeness, Autonomy, Adaptation, and Problem-Solving Adequacy. In our country studies on 'School Organizational Health are yet to be launched upon. A healthy system would tend to invent new procedures more towards new goals, produce new kinds of products, diversify itself and become more rather than less differentiated over time. In a sense, such a system could be said to grow, develop and change, rather than remain stagnant and standard.

Again Purushottam (1979) has touched 'Cosmopolitaness', 'localiteness', 'administrative support' in the context of the innovativeness of the members of the school system

while the present investigator has incorporated these factors as the components in the 'Innovative Proneness Scale' for Secondary and Higher Secondary School Teachers.

From the above survey, it is clear that two studies seem to have been done in the colleges of education. One study is done by Joshi (1972) who tried to depict the chronology of innovative practices of the training college in India. Innovation many times percolate from the college of education down to the school and the school teachers. In order to make the school teachers innovative the teacher-educators have to be so first. Panchal (1977) tried to measure innovative proneness of teacher educators of the Secondary Teachers Training Colleges with the help of self devised and standardized tools.

All the studies done in the field of education deal with the factors affecting diffusion of innovation in some way or the other and the principal's leadership style or the pattern of leadership behaviour as shown in the study of Darji (1975). The studies do not reflect on teachers in the schools and the teacher-educators in the case of training colleges, as the unit of study except

Millers' (1965), Rai's (1972) and Agrawal's (1974) studies.

Miller (1965) observed that inadequate teacher education programmes are great inhibiting factors than realized. He emphasized that bringing about the desired change in education the teacher should be change prone and further if the teacher is to be made change prone his educator has to be so first. Feeling that the change proneness is an important attribute for the success of an innovation, Miller (1965) developed an inventory on change proneness. He observed that teachers are not prepared for the change. They show, sometimes, a great reluctance to accept the existing challenge. Teachers do spend a lot of time, energy on their jobs, are frustrated by their images of unachieved potential and are searching for help in learning new approaches to their goals of education of young being a colleague of the parents. He also found that inadequate knowledge about the process of change is major obstacle to the improvement of education. He stressed that the summer institutes and workshop are the brightest hope to date and this is helpful in imparting new and stimulating experience. According to him the factors fostering change, specially in the American society have been : (1) Acceptance of democratic way,

(2) acceptance of the principles of equality of opportunities; (3) Belief in material progress; (4) Belief in the importance of education.

There are certain other specific factors which also support the educational change, if there are factors fostering change in society in general. Again, Miller (1965) identified these factors as : (1) the cold war (2) the growing demand for knowledge (3) pressures agencies outside the realm of professional educational and (4) advances in behavioural science.

Miller (1965) also found that long range planning for change is very essential. He quotes the significant work of Lippit and associates (done in the university of Michigan) as one of the few serious and sustained research efforts on the changed the role of classroom teachers. He states, 'This important area for study remains largely untapped by researches in the dynamics of change.'

Rai's (1972) and Agrawal's (1974) studies are the only major Indian studies which are exclusively concerned with teachers ; and Panchal's (1977) study is exclusively concerned with teacher educators. The teachers remain the nucleus as they are the ultimate users of innovations and so are the teacher educators in the colleges of education.

From the foregoing review of Indian studies, it can very easily spotted out that NCERT, CASE, and M.B.Patel College of Education, Vallabh Vidyanagar, are the leading institutions who took the initiative in this area of innovation and change in the field of education. But nobody except Panchal who prepared a tool for Teacher Educators has thought to prepare the tool to measure proneness to innovation of the persons working in the schools and colleges and hence the present investigation is very important landmark in this area of research.

Panchal (1977) has done the pioneering work, by preparing Innovative Proneness Scale for Teacher Educators first and by studying their innovative proneness on 21 components with respect to their age, sex, teaching experience, academic qualifications, professional qualifications, reading habits, participation in in-service education programme and foreign visits. Thus, the Panchal's (1977) study laid a foundation stone for the present investigator, who standardized Innovation Proneness Scale for Secondary and Higher Secondary School teachers. The third step could be the preparation of the same type of tool for elementary school teachers.

2.6 Some Pertinent Findings

From review done in the foregoing pages, it is very clear that efforts of the many of the research workers in India and abroad are concentrated more on innovation as such rather than on innovators, adopters or the practitioners of innovations. In this section some major findings of the above reviewed researches are highlighted :

1. So far as this area is concerned the lead is taken by other disciplines, namely, anthropology, sociology, medical sociology and industry. From these disciplines the trend of innovations has percolated down to the field of education.
2. In the field of education the initiative was taken by the U.S.A. and research workers began to explore the area from late sixties and it was accelerated in India by the Centre of Advanced Study in Education, Faculty of Education and Psychology, The M.S. University of Baroda, Baroda ; and M.B.Patel College of Education, Sardar Patel University, Vallabh Vidyanagar, Gujarat.
3. The researches in the field of innovations and change in the field of education owe much to certain antecedents, specifically the recommendations of Mudaliar Commission (1952-53), and the Kothari Education Commission (1964-65), followed by the innovative

activities done by AICSE, NCERT, CASE and lastly State Institutes of Education and State Council of Educational Research and Training. These institutions have given very valuable contribution to accelerate the innovation and change process in our country.

4. Most of the studies done on Innovations and change have identified with innovative ideas as such and the circumstances favourable or unfavourable for them to float and institutionalize.
5. Researchers have tried to identify the roots of innovations with seminars, workshops, orientation courses, etc. organized by various agencies.
6. Researchers have also found out that leadership behaviour, style of pattern of the school principal, organizational climate, and teacher morale are powerful for the enrichment or the decay of innovations.
7. Most of the researches have related to institutions or the forces working in the institutions, either accelerating innovations or crushing them. But very few researches are done on teachers as users of innovations.
8. Lastly, the investigators, who have tried to study the proneness of teachers for innovations, have used the borrowed tools to do so and very few researchers have prepared the tool. The tool that has been prepared by the present investigator is first of its kind and hence the importance of the study. In India Panchal (1977) has prepared ^{a tool} for Teacher Educators of the Secondary Teachers Training Colleges of Gujarat State.

The main purpose of the present investigation is to prepare and standardize the innovative proneness scale for secondary and higher secondary school teachers (Gujarat State) and to relate certain personal and professional characteristics of these teachers of secondary and higher secondary schools with the components of the innovative proneness.

2.7 Implications for the Present Study

From the above review, it is evident that in India only couple of studies have been done in the specific area of innovative proneness of the professionals, Agrawal (1974) who adopted Miller's Inventory and used it to measure the innovative proneness of the school teachers. The studies on personality aspects of superintendents, principals as well as teachers, specially, the cosmopolitaness, radicalism vs. traditionalism, attitude towards innovations, exposure to wider environment, prompt the need of studying all such dimensions in more comprehensive way. In fact, this professional personality trait indicates the tendency of an individual to think and act to an innovation. Thus, a study on innovative proneness of teachers as well as teacher-educators and its correlates is worth taking up.

As mentioned above, Agrawal (1974) has touched the teachers with borrowed tool, but nobody has endeavoured in India to construct and standardize the tool to measure the innovative proneness and hence of teachers of Secondary and Higher Secondary Schools and hence the investigator has tried to study the innovative proneness of teachers of Secondary and Higher Secondary Schools with a tool designed and standardized by himself which is a step far ahead of the study done by Agrawal (1974). The teacher educators of Secondary Teachers' Training Colleges are the sources of the innovative ideas to be implemented by the teachers in the schools. Panchal has prepared the tool for Teacher Educators. Now it is all the more urgent need to prepare and standardize the 'Innovative Proneness Scale for Secondary and Higher Secondary school teachers.' The present investigator has followed the path of Panchal (1977).

2.8 Conclusions

In this chapter about 115 studies, Foreign as well as Indian, have been reviewed. As stated earlier most of the studies done before seventies refer to institutional situations in the context of particular innovations. The main theme of these studies had been to what extent the

institutional environment had been a factor helping or hindering the adoption of innovation. Studies done during the recent seventies have referred to the personal variables of principals, superintendents and the teachers themselves which lead to the successful or distorted adoption and implementation of innovations or the total rejection of them. It has also been found in the recent researches that teachers having particular characteristics are more prone to innovations. A couple of studies have referred to the innovation dissonance which is a attitude-behaviour discrepancy in the context of innovations. The reasons for this dissonance and the solutions to resolve the dissonance need many more researches. A beginning has been made in this direction also by the Centre of Advanced Study in Education, Faculty of Education and Psychology, M.S. University, Baroda, in joint endeavour with the Department of Educational Administration of the same Faculty.

The foregoing review has indicated a number of definitional and taxonomic issues and some of the methodological and conceptual limitations of conventional approaches to the study of innovations in schools. There are serious objections to approaches which regard innovation as an event and view innovations as ends in themselves.

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In the studies completed and undertaken, the school is conceptualized as a system engaged in three core activities - task achievement, internal integration and maintenance, growth and adoption. Within this conceptual framework innovation is viewed as a constellation of subprocesses which represent the school's attempt to grow and adapt to changing circumstances to develop an ongoing capacity for self-renewal, self evaluation and creative problem solving, to establish a state of dynamic equilibrium. The emphasis is shifted from the study of 'one shot' innovations to an exploration of the complex processes of adopting, adapting, developing, implementing and assimilating exogenous and endogenous changes within a framework of changing contextual demands and constraints. Specific innovations, however, designated, are critically interrelated with one another and their adapters and recipients interact with other individuals and groups within the system. The processes of growth and adaptation are in turn inextricably interrelated with the complementary processes of task achievement and internal integration and maintenance.

Innovations are not regarded as clearly defined or sharply demarcated objective realistics. Specific innovations are phenomenologically 'constructed by individuals perceptions,

their past experiences, their attitudes, values, cognitiens, competencies, their interaction with other individuals and reference groups and a host of enabling and inhibiting contractual factors.

In the main, the review of previous related researches has provided very useful and rich background to persue the investigator to undertake this study that is being reported.

CHAPTER II

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