

C H A P T E R I I

REVIEW OF RELATED LITERATURE

All things must change,
To something new, to something strange,
Nothing that is, can forever exist.

- LONGFELLOW.

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CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter is destined at reviewing the related literature and researches dealing with the innovative proneness of teachers with a view to explor^{-ing} the basis for needed research in the area. It is in the fitness of the things to mention here at the outset that no effort whatsoever has been made to look into the innovative proneness of the persons who equip the teachers during their pre-service programme. The review in this chapter primarily focuses on what researches have been done in the field of innovations and on what lines further efforts should be geared to. Here, it is worthwhile to mention again that whatever work has been done in this connection is done mainly on innovations and not on innovative proneness. The scholars have been doing thinking about the innovations and their diffusion since the beginning of the present century.

The beginning of researches that has been made in the field of diffusion of innovations dates back to the publications of Kroeber (1923) and Wissler (1923). These publications have influenced later researches in this field. Studies, which are done before this date, except

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Jarde's (1903) work have influenced little the later researches done in this field. The earlier studies were started in Anthropology dealt mainly with the exchange of ideas between societies rather than within the society. It was also observed that literature and researches were not merely confined to Anthropology but have percolated to many other disciplines. Studies in all these disciplines have dealt with a wide range of concepts and problems such as diffusion process and adoption process, change agents, nature and characteristics of innovations and categories of innovators and so on. Rogers (1962) has identified six major traditions which deal with diffusion studies. Although the present chapter deals mainly with the researches done in the field of education, the investigator has tried to peep into the other disciplines as well.

2.2 INNOVATIONS THROUGH VARIOUS DISCIPLINES

Education deals with human behaviour, it is process of modification, socialization, aculturation and the value orientation of the individual in the society. Various disciplines takes various aspects of human behaviour for the study. Education does not enjoy monopolistic position in this regard, as a matter of fact education owes ^{much} to various disciplines. Education is sensitive to place and time. Education changes according to the change in society. Innovation and change has to take place first in the society then it percolates down to education

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through many activities in the society, to say in other words, through many subjects and through many fields and disciplines. In this section, therefore, efforts have been made by the investigator to have a fair look over other areas and disciplines, viz., Anthropology, Sociology, Medical Sociology and Industry.

2.2.1 Anthropology

Anthropology is the oldest diffusion of innovations in traditions which have influenced all other traditions specially early sociology, rural sociology and medical sociology. The work of Kroeber (1923) and Wissler (1923) can be considered as beginning of diffusion of innovations studies in traditions. Linton (1936) was the first to find that the characteristics of an innovation are related to its rate of adoption. Characteristics of an innovation, thus, influences the adoption and by members who are involved in the process and teachers and their educators are positively related in the system. Sharp (1952) has laid the emphasis on the social consequences came to the field made of Anthropology. Barnett (1953) has made important contribution in the sense that he described the adoption of innovations at the psychological level. The studies of Margaret Mead (1955) and Erasmus (1961) belong to this tradition.

2.2.2 Sociology

Tarde (1903) is the pioneer in this discipline. He came out with certain basic suggestions such as S-shaped curve of adoption rate in relation to time and cosmopolitanism of innovators. Most of the early sociologists studied only one innovation over a geographical area. Macvay (1940) first set a model of studying innovativeness by constructing an "index of progressiveness" for the first time. Bowers (1937 and 1938) was the first one to collect data from other sources than government records and he was the first to find out that personal sources were more important for earlier adopters than for late adopters. Ryan and Gross (1943) did a classic study and contributed understanding of different concepts which are used in this field. Lionberger and Wilkening are also important for their contribution. Lionberger's series of studies (1951, 1953, 1955, 1956, 1959 and 1960) have given an insight into the sources of information, communication norms, traditionalism, modernism, social status, and opinion leadership and its relationship with the diffusion of ideas. Wilkening in his series of studies (1949, 1951, 1952 and 1953) used socio-psychological approaches to find out the correlates of innovativeness. A rapid increase was observed in this field from fifties not only in U.S.A. but also in other countries. A number of studies were conducted in India also such as Barnabas (1955, 1957 and 1958), Rahulkar

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(1958, 1959, 1961, 1962 and 1963); Bose (1960, 1961, 1962, 1963, 1964a and 1964b); Rao (1961); Bose and Dasgupta (1962); Bakshi (1962); Rathore (1962); Sinha (1963); and Sinha and Yadav (1964). All these studies are concerned about innovations and change in agriculture.

2.2.3 Medical Sociology

In this tradition studies can be classified into groups: (1) where the adopters are doctors; (2) where the adopters are the public. Caplow's (1952) study was one of the first studies in this tradition. These studies have tried to find out the influence of opinion leaders in the diffusion of drugs among medical doctors. Investigations of sociologists like Katz (1956, 1957 and 1961); Menzel (1957, 1959 and 1960); Coleman, et al. (1957) are well-known for their contribution to the diffusion studies. Deasy (1956), Hochbaum (1960) and Yeracaris (1961) - studies completed by these researchers centered round the public acceptance of medical ideas.

2.2.4 Industry

The studies done in this field are motivated to conduct researches on economics of innovation. Important studies in this tradition are of Danhof (1949), Carter and Williams (1957, 1959), Enos (1960), Mansfield (1960, 1961a). Danhof (1949) categorises innovators in the field of

7 industry as innovators, initiators, fabians, etc. Carter and Williams (1957 and 1959) also classified the industrial firms according to innovativeness. Enos (1958 and 1960), and Mansfield (1960, 1961a and 1961b) has studied the relationship between the profit and innovativeness.

So far as the researches in the area of innovations and change is concerned, it can, thus, be seen that the lead has been taken by anthropologists, sociologists, the men of medicines and industrialists. (From these disciplines the idea migrated to the field of education on the basis of the fact that educational institutions are also organizations with some special features.) If the ideas planted in the industrial organization where there are less chances of face to face human interaction, grow and flourish, it is equally true, perhaps more, that if the ideas are planted in educational organizations where there are more chances of face to face human interaction, grow and flourish with better results. With this fact in view the research workers in the field of education thought it worthwhile to follow the suit in schools and began to research in the area of innovations in organization and later on, on the persons responsible for generating, communicating, diffusing and adopting and adopting innovations in the schools. Rogers, Miller and Miles are very well known in the world for this and the idea travelled back to India with Indian visitors to U.S.A. and U.K. In India, the lead has been taken by

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CASE, Faculty of Education and Psychology, The M. S. University of Baroda, Baroda; and S. P. University, Vallabh Vidyanagar. In the sections that follow studies in the field of education have been reviewed.

2.3 INNOVATIONS IN THE FIELD OF EDUCATION

Rogers (1962) has summarised 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 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

9 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. These studies 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 made valuable contributions in defining the concept of adaptability and other associated terms in identifying factors. Boss (1958) reports that about 50 years lapsed after development of a new practice before its adoption by the public schools and the 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 the whole thing 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.

Roosa (1969) studied organizational climate, leader behaviour and their relations to the rate of adoption. Leverne (1968) also studied the relationship between organizational climate, age of the staff, years in the schools, and number of professional staff, perception of teachers and administrators at the most innovative and least innovative schools.

The studies that have been reviewed herebefore 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) analyses 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 Hull (1968) found out the variables influencing teacher adoption of cooperative agricultural occupation curricula. Walberg and Welch (1967) found innovative physics teachers scored higher on theoretical and aesthetic values

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than other male high school teachers, 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 teachers, 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 intrceptive.

Bickert (1968) studies organizational values and characteristics of school system. Classroom teachers from innovative school systems showed a relatively high degree of satisfaction with instructional programmes in their school, which those in non-innovative schools 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 of 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 innovations 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. Since 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 innovative, more years of education are positively related to the adoption of innovations.

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 a 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. Bholia's (1965) findings have emphasized the need to recognize physical, social and intellectual environments in studying the innovation. Griffith (1964) and Pallegirin (1966) are of the opinion that the major stimuli for educational innovations and change come from external sources. Hilfinker (1969) emphasized the need for a self-renewing posture in education to meet the pressures of change.

In this section about 30 studies done abroad have

been reviewed. Almost all the studies have focussed on the nature of organizations either ready or otherwise for 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 travelled back with Indian visitors who visited foreign countries. The evidences relate back to fifties. But the considerable amount of work began to be done from early seventies, when the CASE identified with this area of change and innovation. All these efforts were in connection with organization. Slowly and gradually, it filtered down to individuals and at last the investigator is dealing with innovative proneness of the teacher-educators. The similar work has already taken start with teachers.

2.4 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, identified the present area for intensive and sustained study in 1970. The selection 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, etc. The Secondary Education Commission (1952-53) had come out

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with its recommendations about higher secondary schools and multipurpose schools, dynamic methods of teaching, establishing guidance services, etc. 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 AICSE were: (i) extension services to schools, (ii) examination reform, (iii) improvement of science education, (iv) experimentation by teachers, etc. In 1961, NCERT was established and its various departments became the sources of innovations in school education. In 1966, the Education Commission (1964-66) recommended a number of measures for improvement of school education, work experience, school complex, institutional planning, etc. This represented the efforts from the Central and State authorities to bring about change in education. To give administrative support ^{to} the spread of these 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).

In spite of these multipronged 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,

16 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 disseminate them through seminars.

The NCERT organized the first seminar on educational innovations 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 the Hyderabad seminar, three studies were undertaken in Indian universities in the area of factors

influencing the diffusion of innovations in Indian schools. 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) the then Research Fellow 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 procedures 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^{diffusion} 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 innovations being floated, their sources, although 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 rooms (subject rooms rather than classrooms), 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, Headmasters, Seminars, Workshops, Inspectoral books, magazines, visits to other institutions and other countries, visitors, experts, State Department of Education, State Evaluation Unit, S.S.C. Board, employment Bureaus, Research Laboratories, Universities, Scientists, Headmasters' 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-teacher ratio, students strength between 500 to 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 schools. He also found that academic and professional qualifications of the headmaster influence the diffusion process whereas Buch (1972) found no relationship between qualifications of the headmaster and adaptibility 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 innovative schools are better qualified and trained. Age of the staff is not significantly related to innovativeness of the school system. Among important inhibiting factors toward innovativeness of the school system are rigid government rules about syllabus and textbooks, inadequate grants, too much of office and organizational work on the part of the principal, less equipped staff, lack of initiative and interest 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 correlates of innovation acceptance. This is one of the earliest attempts in India

to study the mechanism of educational change. She found that cosmopolitanism and age of teachers are significantly related to acceptance of innovation. She also found that the innovations 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, 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 headmasters having democratic and favourable attitude towards teaching, more experienced, drawing higher salary, having low rate conflicts are more innovative. Older the head more adaptive he is. She found 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 headmasters and principals than the teachers. The headmaster's leadership style is a deciding factor in the process of diffusion of innovations 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, Zaveri (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 challenge to them. She further observed that innovative practices are adopted in the areas of teaching practices, examination, curricular activities, school management, the headmaster and social relations, the school building, teaching-learning process, and co-curricular activities.

A study by 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 practices, factors affecting innovations and 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 highlighted some or 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 innovations. 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 environment, general mass media exposure, age, socio-economic status, teachers' perception of students' attitude towards the innovation, perceived principal's 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 per cent variance in time of awareness. In case of time of adoption, perceived frequency of horizontal communication about the innovation, professional communication behaviour, ascribed 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 per cent 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 .5964 with the criterion variable internalization explaining 35.57 per cent 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 principal's support of the innovation, perceived source credibility of the principal and perceived psychological distance between other teachers and the principal which together yielded an R of 0.5017 to explain 25.17 per cent 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, teacher's 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 per cent 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 innovations, 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 the 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 within a school system, Opportunities should be created for teachers to expose the students to the innovations 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 headmaster's personal and attitudinal aspect is by Buch (1972). Her efforts have been centred round finding out the conditions that promote adaptability in Indian schools. The investigation is mainly concerned with the principal's 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 per cent. These variables are inter-school visitation, self-rated administrative ability, parents' involvement, professional meetings attended, feeling of security, training college support of innovations, teacher's rating of administrative ability, community involvement, equalitarian relationship with training college personnel, interest of the management, self-rated administrative ability, and cosmopolite 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, teacher training, etc. This study by these two researchers located thirty innovations scattered over various fields of education being implemented in Gujarat secondary schools. Amongst them weekly and periodical test, regular staff meeting, internal assessment, weightage. They found that in order

of strength training college personnel, seminar, Department of Extension Services, Director of Education, and journals, act as powerful source of innovations.

Buch and Buch (1973) found in their survey study that experimental attitude of headmasters, 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 in charge, loss of interest of teachers, loss of zeal, found to be more time consuming than expected and burdensomeness on the part of the teachers.

Bhagia (1973) studied the perceived characteristics of innovations 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. These are academic effectiveness, complexity, diversibility, efficiency, facilitation, meaningfulness, practicability, prestige, relative advantage, structuraliaation (all are significant at .01 level) and communicability (significant at .05 level). Doctor (1973) also studied about factors affecting the diffusion 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 in difference 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 an academic leader image amongst the principal and teachers.

Dave's study of curriculum change in secondary schools, found that local autonomy, contact and guidance of Extension Services Departments, principal's leadership are the most powerful facilitating factors than availability of material and technical aid, teacher's 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 educational 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 to Agarwal (1974) to repeat the study of relation between teacher morale and innovative proneness.

Agarwal (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 qualifications, 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, 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 30 randomly selected schools from Gujarat, she adopted Miller's inventory on change proneness to measure the innovative proneness of teachers, 229 teachers of randomly selected schools responded the inventory. In this study, Agarwal (1974) found that: (i) mean score of the innovative proneness of male teachers was higher than that of the female teachers; (ii) mean scores of the twelve independent variables of male teachers

was higher than that of female teachers; (iii) mobility, the independent variable was significantly related at 0.01 level for the whole group, (taking sex-wise) the mobility of male teachers was significantly related at .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 any 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; and (vi) the six variables, namely, teacher rapport with principal, satisfaction with teaching teacher salary, community support of education, school facilities and services and community pressures, predicted upto 72.3 per cent 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 principal's manifesting high 'initiating structure' and high 'consideration (HH pattern)' and the principal's manifesting high 'initiating structure' and low 'consideration' (HL pattern), whereas the schools with low innovativeness have principal's

manifesting low 'initiating structure' and 'low consideration' (LL pattern of leadership behaviour) and the principal's manifesting low 'initiating structure' and high 'consideration' (LH pattern of leadership behaviour of the principals).

From the above survey, it is clear that no study seems to have been done in the college of education. There is only one solitary study done by Joshi (1972) who tried to depict the chronology of innovative practices of the training colleges in India. Innovations many times percolate from the colleges of education down to the schools and the school teachers. In order to make the school teachers innovative the teacher-educators have to be so first, and hence the importance of the study by the present investigator.

All the studies done in the field of education deal with the factors affecting diffusion of innovations 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 Miller's (1965), Rai's (1972) and Agarwal'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 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 and 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 educating young and being a colleagues of the parents. He also found that inadequate knowledge about the process of change is a major obstacle to the improvement of education. He stressed that the summer institutes and workshops 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) The acceptance of the principles of equality of opportunity; (3) Belief in material progress; and (4) Belief in the importance of education.

There are certain other specific factors which also support the educational change, if these are the factors fostering change in society in general. Again, Miller (1965) identifies these factors as: (1) The cold war; (2) The growing demand for knowledge; (3) Pressures from agencies

outside the realm of professional education; 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 Lippitt and associates (done in the University of Michigan) as one of the few serious and sustained research efforts on the changed 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 Agarwal's (1974) studies are the only major Indian studies which are exclusively concerned with teachers. 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 be 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 has thought to prepare the tool to measure proneness to innovation in the persons working in the schools and colleges and hence the present investigation is very important landmark in this area of research.

2.5 SOME PERTINENT FINDINGS

From the review done in the foregoing pages, it

is very clear that the efforts of the most of the research workers in India and abroad are concentrated more on innovations 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 (1964-66), 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 or pattern of the school principal, organizational climate, and teacher morale are the powerful forces responsible for the growth or the decay of innovations.
7. Most of the researches are related to institutions or the forces working in the institutions,

either accelerating innovations or crushing them, but very very few researches are done on teachers as the users of innovations.

8. All the above studies are done in the school situation and nobody has touched the training college and teacher-educators.
9. Lastly, the investigator who has tried to study the proneness of teachers for innovations has used the ~~ready-made~~^{own} tool to do so and nobody has prepared the tool and hence the importance of the present investigation.

The main purpose of the present investigation is to prepare and standardize the Innovative Proneness Scale for Teacher-Educators of Secondary Teachers' Training colleges of Gujarat and to relate certain personal characteristics of these teacher-educators with the variables of the innovative proneness.

2.6 IMPLICATION FOR THE PRESENT STUDY

From the above review, it is evident that almost no study has been conducted in the specific area of innovative proneness of the professionals, except Agarwal (1974) who adopted Miller's Inventory and used it to measure the innovative proneness of school teachers. The studies on personality aspects of superintendents,

37 principals as well as teachers, specially, the cosmopolitan-ness, 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, Agarwal (1974) has touched the teachers with borrowed tool, but nobody has touched, the teacher-educators in the colleges of education and hence the investigator has tried to study the innovative proneness of teacher-educators with a tool designed and standardized by himself to measure it which is a step far ahead of the study done by Agarwal (1974). The Teacher-educators are the sources of innovative ideas to be implemented by the teachers in the schools. The innovative teacher-educator begets innovative teacher, so it is all the more important to prepare and standardize the 'Innovative Proneness Scale for Teacher-Educators' first and 'Innovative Proneness Scale for the Teachers of Secondary and Higher Secondary Schools' thereafter. The next chapter deals with the plan and the procedure of the study in hand.

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