CHAPTER - I
INTRODUCTION

A spirit of change and innovation pervades educational activities in many sections of the world. This spirit is in part of dissatisfaction: dissatisfaction with schools geared to the needs of only some of the pupils enrolled; dissatisfaction with the narrow focus of many schools; dissatisfaction with the irrelevance of much of the curriculum. But it is the positive side of this spirit of change that has made the past dozen years so interesting from an educational point of view. A few thoughtful innovators and thousands of creative teachers, often far apart geographically, seem almost to be joined in a common quest for schooling that is meaningful and satisfying to each individual (Basset, 1970).

In the post Independence period, there have been marked changes in the educational system in India. The aims of education have been redefined in accordance with national goals and aspirations. The structure of education is still undergoing modifications. Educational practices both inside and outside the classroom have undergone metamorphosis, and the educational planners and policy makers have broken fresh grounds and made revolutionary changes in the system in accordance with the present socio-economic, political and cultural demands of the society. The report of the Indian Education Commission (1964) is a testimony for the same. The commission has tried to strike a balance between the inevitable considerations of the existing framework of Indian education and equally essential desire for innovation and transformations in concomitance with exigencies of resurgent India pacing rapidly scientific and technological advancement (Safaya, 1976).

Change and Education

Calls for change have come at us from all sides, some plain and practical, others urgent and impassionate. The need for change has been expressed in terms of the economy and many groups have said that we need a workforce that has the technological skill to complete in the international
market. The need for change has been expressed in terms of the state of society. Connel et.al (1982) rightly comments that:

"in a society disfigured by class exploitation, sexual and racial oppression the only education worth the name is one that forms young people of taking part in their own liberation. The need for change has been expressed in terms of the self-concept of young people"

Our present secondary school system exerts on many pupils a destruction of their dignity, particularly but by no means exclusively from the working class. When the dignity is damaged, one's deepest experience is being inferior, unable and powerless (Hargreaves, 1982).

Proposals for change although issuing from quite different sources have been interestingly expressed in remarkably similar terms, and they are about much more than basic skills and modernization of curriculum contents. The pupils need more opportunity to learn for themselves, to express their own views and to develop their ideas through discussion (Rudduck, 1991). While change in society has become commonplace, the schools remain much as they always were. Despite huge efforts the educational establishments at all levels has shown a remarkable inactivity to implement and maintain more effective ways of teaching or to create school settings that have productive and exciting learning environments.

Change in education is not only the essential feature of the sector but it is also a desirable feature. Education being a subsystem of the society cannot afford to remain isolated from the changes that are taking place in other fields of the society. Change is departure from the prevailing position. It refers to the process of departure in addition to being the destination of this process itself. It indicates that there is some mechanism in the system to get the signals indicating the need for a deviation from the status quo. It is in response to such signals that process of change in education would, therefore, refer to the process of departure of the variables within the educational sector from their current positions, emergence of new variables or deletion of some of the existing variables in these process and to the arrival of these variables of the
new levels which may be called as the outcome of the process (Panchmukhi, 1996).

**Sponsors of Change**

Change usually requires a strong initiating sponsor who is committed to a plan and provides the necessary resources. Supporting sponsors have the logistical, economic and political proximity to maintain the change process. Sponsorship cannot be delegated to change agents. Agents can be charged with implementations, but can neither sponsor nor legitimize the change (Cook, 1996).

Remarkably, detailed and intensive study of the educational change process does not have a long history. It is only since the 1960s that any explanation has been offered of how educational changes work in practice. This decade has come to be called "the adoption era" because educators were preoccupied with how many contemporary innovations were being adopted. The 1960s was a period of new mathematics, new chemistry and physics, open education, individualized instruction, team teaching and so on. Innovations, the more, the better become the work of progress (Fullan, 1991). All these innovations are the results of educational changes taking place in different periods.

Earlier research on the adoption and implementation process stressed the impact of the nature of the change itself on the potential users that is teachers in their classrooms. The characteristics of the change its size, complexity, prescriptiveness and practicality for teachers were considered in the lights of teachers’ response, most often in hindsight. Fullan, (1993) gives the following characteristics of the change process.

**Need**

Many innovations are attempted without careful examination of whether or not they address priority needs. Teachers for example do not see frequently any need for an advocated change. Several large-scale studies in the United States confirm the importance of relating need to decision about innovation or change direction. Precise needs are often not clear at the beginning, especially
with complex changes. People often become clearer about their needs only when they begin the process of implementation itself (Fullan, 1991). Unless there is a perceived need of a change any innovation introduced with the system would face disastrous consequence.

**Clarity**

Clarity about goals is a perennial problem in the change process. Even when there is agreement that some kind of change is needed, as when teachers want to improve some area of the curriculum, or improve the school as a whole, the adopted change may be not at all clear about what teacher should do differently. Gross et. al (1971) found that majority of the teachers were unable to identify the essential features of the innovation they were using. Problems relate to clarity have been found in virtually every study of significant change. In short, lack of clarity, diffused goals and unspecified means of implementation represent a major problem at the implementation stage; teachers and others find that the change is not simply very clear as to what it means in practice.

**Complexity**

Complexity refers to the difficulty and extent of change required of the individuals responsible for implementation. The implementation of an innovation depends on the acceptance of the individual or the group who are the actual practitioners. To get practitioners’ acceptance, their understanding of the change has to be assured and the change can be examined in regard to difficulty, skill required, and extent of alteration in beliefs, teaching strategies, and use of materials, prior to take a decision on its implementation. Many changes, such as open education, systematic direct instruction, inquiry-oriented social studies, technology across the curriculum, effective schools, and parent involvement, require a sophisticated array of activities, structures, diagnosis, teaching strategies, and philosophical understanding of effective implementation is to be achieved. Simple changes may be easier to carry out, but they may not make much of difference. Complex changes promise to
accomplish more, but they also demand more efforts and their failure takes a greater fall.

**Quality and Practicality**

The last factor according to Fullan (1993) is associated directly with the nature of changes i.e. quality and practicality of the change process. Whether it be a new curriculum, a new policy, a restructured school or whatever. The history of the quality of attempted changes relative to the other three variables (need, clarity, and complexity) is revealing. To say that the importance of the change is self-evident is to underestimate how adoption decisions are made. Inadequate quality and even the simple unavailability of materials and other resources can be the result when adoption decisions are made on grounds of political requisite, or even on perceived need without time for development. In other words, when adoption is more important than implementation, decisions are frequently made without the follow up or preparation time necessary to generate adequate materials.

Beside the above characteristics, there are certain other characteristics also that affect the change process. Fullan (1993) put them in the following category.

(i) **Local Characteristics**

It analyses the social conditions of change, the organization or setting in which people work, the planned and unplanned events and activities that influence whether or not given change attempts will be productive. The local school system represents one major set of situational constraints or opportunity for effective change. The same program is effective in one school system and disastrous in another.

(ii) **Region Specific Characteristics**

Adoption decisions are frequently taken without adequate follow-through. The difficulties (subjective realities) inherent in the process of change are not well understood. Most attempts at collective changes in education seem to fail, and failure means frustration, wasted time, feelings of incompetence, lack of support and disillusionment. Since introducing innovation is a way of
life in most school systems local authority establish track record in managing change. The local implementation processes therefore, essential if substantial improvement is the goal. Local administrators set the conditions for implementation to the extent that they show specific forms of support and active knowledge and understanding of realities of attempting to put a change in to practice.

(iii) Board and Community Characteristics

The role of school boards and communities in implementing a change can not be generalized, because context varies so widely within as well as across countries. Rosenblum and Louis (1979) found that "the degree to which environmental changes external to the school were impinging on it to change" was one of the four readiness factors related to the subsequent implementation, major conflicts sometimes incapacitate districts in bringing about actual change; in a sense certain energy can be turned to implementation. Attending political stabilization in relation to the community is one of the primary tasks of planning and implementing new programs. In contemplating or introducing innovations the school districts frequently ignore the community and school boards. Therefore, most school communities are usually not directly or indirectly involved in implementing the innovations.

(iv) The Principal

The principal is the most likely person to be in a position to shape the organizational conditions necessary for success such as the development of shared goals, and procedures for monitoring results. A body of research indicates that the principal can have major impact on implementation but in practice he or she does not play an active role frequently to realize this. Many principals suffer from problems of implementing an innovation as a facilitator of change. They are not psychologically prepared to face the complex affairs of managing change specifically in school level.

(v) Teachers

The psychological rate of any teacher may be more or less predisposed towards considering and acting on improvements. Depending on their
personality, and stage of career, some teachers are more self-actualized and have a greater sense of efficacy, which leads them to make, and persist in, the effort required to bring about successful implementation. Even the culture and the climate of the school can shape an individual's psychological state for better or worse. Since interaction with others influences a person's actions, relationships with other teachers are a critical variable. Change involves learning to do something new. Interaction is the primary basis for social learning. New meanings, behaviors, skills and beliefs depend significantly on whether teachers are working as isolated individuals or are exchanging ideas, support and positive feelings about their work. Collaborative work cultures at school level are especially crucial for successful implementation.

(vi) Government and other Agencies

Provincial/state and national priorities for education are set according to the political forces and lobbying of interest groups, government bureaucracies, and elected representatives, legislation, new policies, and new program initiatives arise from public concerns that the educational system is not doing an adequate job of teaching basics, developing career relevant skills for the economic system, producing effective citizens, meeting needs of the society. The policy makers and the local practitioners inhabit different world, each side ignorant of the subjective world of other. The quality of relationship across this gulf is crucial to agreement and to reconciling problems when there is conflict among these groups; between state and department and local districts; and between national agencies and local authorities.

Theories of Educational Change

Tremendous efforts have been made in the past to explain social change. Some of these explanations may be relevant also in analyzing the educational change, whether it is automatic or planned. Various theories which are bodies of logically interdependent generalized concepts with empirical verifications have tried to explain the planned changes in education in terms of ideological, structural and programmatic considerations in educational system.
The prevalent theories of educational change can be explained on the basis of two basic social change paradigms:

(i) Equilibrium paradigm wherein social change is said to be oriented towards equilibrium; and

(ii) Conflict paradigm where social change is born in and oriented towards the conflict.

*The Equilibrium Paradigm*

The in-built forces of society affect the change process to a considerable extent. The conflict paradigm of social change states that there is no question of reaching equilibrium because the society would be under continuous contradictions and inherent conflicts which would make it highly volatile and in a state of continued disequilibrium. However, the equilibrium paradigm traces the change process in three versions:

(a) Evolutionary theory of educational change;

(b) Structural/functional theory of educational change;

(b) System approach to educational change.

The base of evolutionary theory of change has strong influence of Darwin's work on biological evolution, which treats education as an integrated structure. This structure is oriented towards maintaining stability as in Darwin's theory. It states that the simpler and primitive structure of education gives rise to more complex and modern forms of educational structure. Durkheim (1989) writes "educational practices are not phenomenon that are isolated from one another; rather, for a given society they are bound up in the same system, all the parts of which contribute toward the same end; it is the system of education suitable to this country and to this. Each people have its own, as it has its own moral, religious, and economic system, etc. But on the other hand, people of same kind, that is to say, people who resemble one another with respect to essential characteristics of their constitution should practice comparable system of education."

Wilson (1973) has tried to link up the type of schooling with the stage of cultural evolution of the society. Even Thomas (1968) also attempts to establish
a casual sequential link between stages of schooling and national development. According to him, if memorizing, training, intellectual developing and problems solving are the higher and higher stages of educational development, it appears that this progress from the first stage is concomitant with the traditional authoritarian state of education to the fourth stage is concomitant with the traditional authoritarian state of culture with cultural resistance to technological innovations to a superior, open democratic and pluralistic state with high degree of technological advancement.

Educational change is also explained under the theory of equilibrium paradigm from another standpoint, which is properly known as structural/functionalist approach. This approach is said to be 20th century version of evolutionary theory of change. It believes in an automatic response mechanism of the system for educational change. The human capital revolution in 1960s in the field of economics of education can be considered to be one of such approaches in the framework of structural functionalist perspective.

The Conflict Paradigm

The profounder of conflict paradigm theory believe that the society is under continuous contradictions and inherent conflicts, which make it highly volatile, and in a state of continued disequilibrium. There is a phenomenon of conflict between the elite and the underprivileged in the society in which the educational reform is born. The educational reform emerges out of this constant conflict which may not necessarily be among the equals in a highly heterogeneous and stratified society, rather from the diversified group of the society. Since education is a sub system of a wider system, any reform or change can be interpreted in terms of this conflict. Education only reflects the in-equalities social structure. Hence, the profounder of this theory suggest that to overcome the exploitation of un-equals, the in-equalities social structure should be destroyed and a new socio-economic order should be built, where education would also be influenced by this new socio-economic order.
Modern theorists assume high degree of normative consensus within societies. Conflict is a pathological deviation from consensus (Paulsten, 1976) and the changes that do not arise from social needs as articulated through that consensus are dysfunctional. Clark (1962) illustrates this view well "Greater schooling for greater numbers has brought with it and evidently implies a greater practicality in what the schools teach and what they do for students. The existence of children of diverse ability calls forth the comprehensive school."

This view is partially supported by the Neo-Marxists those see consensus, as a pathological deviation from conflict. But they advocate that the consensus to be regarded with suspicion, since it may be the product of co-option (adoption of the values of a dominant group or of false consciousness (failing to see what is in the real interest of the group). Educational change from this perspective is a continuing struggle of competing interests, and policy and innovation reflect the dispositions of group that have power. Therefore, the conflict paradigm of change assumes that various organizational and community members of a particular society have different interest (on the basis of race, sex, class and age) and that values are not shared in common. The basic glue that holds organizations and communities together is interdependence required for mutual survival and ability of one group to exert enough power to rule the system. People do not necessarily trust each other, and certainly, low power groups do not trust the authorities to make decisions in their interest. Thus, the basic tactics utilized to make changes involves bargaining and regulations, where groups with fairly equal power assess each others strengths and make decisions that will protect and compromise every one's needs. When this process fails to work smoothly the change does not give positive results because one group manages to gain-sufficient powers to get away with ignoring or disregarding another group’s needs and interest. Hence the other school of thought which believes in consensus approach hold the view point that to resolve the conflicts in the society consensus approach is the workable solution to create a broad based community problem solving process. In this process
representatives would be sought from all portions of the community and from racial groups. When these people are brought together, they may be asked to respond to various problems or visions and to develop programs or policies that might create solutions to these problems. Another consensus tactic could involve a professionally designed planning process. These same representatives of various groups could work together with educators or expert consultants to plan the school systems approach to reducing discrimination or making changes in the professional roles. The rational basis of community planning efforts rests on the ability of all members of the community to utilize the technical skills of professional experts who are committed to the general welfare and to be able to work together to focus on common problems and to agree with one another on mutually satisfactory solutions. A third tactic in this line, and the one that is central to either of the other two, is wide spread dissemination of information about the school system, professionals views of the needs of various groups, the rationale for channelling, current student outcomes, and so on (Chasler, 1981).

A glimpse to the conflict and consensus paradigm given by both the schools of thoughts substantiates the fact that in a society where there is diversification in every aspect of life, conflict is inevitable. The conflict emerged in several aspects is one of the major resisting factor to the change process. Even a change is introduced in the system can neither be nourished nor can be survived. Therefore, it is quite essential to strike a balance and resolve the conflict by reaching out some appropriate solutions through a kind of compromise and consensus. In this process the second school of thought that advocates for consensus seems more relevant. The strategies evolved in bringing the people of different groups of a community in a common platform are the most appropriate alternative that makes possible to introduce change in the school system. It initiates a joint venture to attain the desired and well-set objectives that are essentially common in nature.
Sustained Change

All educational changes may not be real changes. Some of them may be only fictitious changes in the sense that they do not leave clear impact on different aspects of educational system or through these aspects on the different aspects of the society. Therefore, in order to understand whether a particular experiment on education has led to a change in the educational setup, it may be necessary to compare the situation in education before introducing the experiment with the situation after experiment (Panchmukhi, 1996).

It has been witnessed over the years that major volumes of changes introduced in the school system do not sustain. Within a very short span of time they fade away. Many of the case studies on change and their sustainability in international scenario quite often have substantiated this fact. Wideen (1987) observes:

"While change in society has become place, the school remains much as they always were. Despite huge efforts the educational establishments at all levels has shown a remarkable inability to implement and maintain more effective ways of teaching or to create school settings that are production and exciting learning environments for schools."

Rosario (1986) an Italian educationist observes that "Reactive and resistant mechanisms function to preserve school behaviour in a context of innovation and change".

Two Swedish educationist Tangerud and Wallin (1986) comment that: "It can be said that by and large the schools have not changed fundamentally over some decade."

An American educationist House (1979) writes:
"The most remarkable feature of the educational system is its capacity for continuity and stability in the face of efforts at change. We are confounded by the inability of innovations to reform the school."

Another popular educationist of early eighties with a more cynical view of change observes:
"When we speak of an innovative school, we mean one that tries one new thing after another without making one of them work." (Runkel, 1984)

These versions of some of the most popular educationist of twentieth century stimulates one's mind to think that we are left with a paradoxical impression of stability and yet change, of diversity and sameness. Though this paradox can be explained by distinguishing changes that affect the deep structures of schooling, and developments that alter day to day practices, but not always the way teachers and students think about schooling. There is absolutely no doubt that over the years we have learned how to introduce new content and new materials in to the curriculum, but it seems that we have failed to adopt at changing the process of teaching and learning: too often the new content is conveyed in the baggage of traditional pedagogy. A study was conducted by Goodlad (1984) on 1000 elementary and high school classrooms, the study concluded that:

- The teachers were the main determiner of activities;
- Classes were usually praised for the sum of their individual performances rather than for any collaborative accomplishments;
- Students engaged in a narrow range of classroom activities;
- Whole classroom teaching was formed the most dominant pattern of classroom organization; and
- Remarkably little evidence of joy in learning was found, and the emotional tone of the succession of lessons that made up the students school day was remarkably uniform (Fullan, 1982).

**Barriers in Change Sustainability**

The basic problem in the direction of change sustainability has been that we have generally underestimated the power of the existing culture of the school and classroom which has a very significant role in accommodating, absorbing or expelling innovations. It is the existing school climates that determine the survival of change process to a great extent.

Second, the change strategies have within them the seeds of a contradiction. If they succeed they must confront future developments in an
evolutionary way or seek to renew the revolution through sporadic upheavals that by definition challenge their original premises. The least attractive outcome is that of the ossification of revolutionary rhetoric and attachment of structures which outlive their original usefulness.

Third, education systems are complex social systems which have considerable inertia and do not respond to stoke of the policy-makers plan in the ways in which some other organs of government might do. The education systems have their in-built resistivity to change. Because any change introduced in the existing structure in some or the other way disturbs the equilibrium of the structure.

Fourth, change, as has been discussed in the beginning of this chapter, needs an advocate and a strong initiating sponsor. Advocates of change and sponsor are different. Advocate of the change might be an individual or a group that feels the need of the change and than design it drawing out a blue print. The rest is almost cared by the initiating sponsor, whose sole responsibility is to push the change ahead. Of course, it is a sort of risk, because the sponsor has to proceed without the knowledge of success or failure of the change. If the change gets a conducive climate and is potential enough to overcome the stumbling blocks in the path of its implementation, it clicks and gradually becomes institutionalized, maintains continuity and ensures its sustainability. Therefore, the role of advocate of change and sponsorship assume their importance in the whole process.

Fifth and most responsible factor for sustaining the change process is the managerial factors. Once the change has been introduced in the system, it tends to create complexities and conflicts. To resolve these conflicts there should be restructuring of the managerial process that entails an attitudinal change among the people concerned, convincing them about the positive aspects of the change, empowering them duly and creating a high level of commitment within them to hold on with the change process. Here comes the role of the top brass, essentially, the principal of the school or the head teacher. The principal being in the helm of the affairs must be ready to shoulder the
responsibility of creating a conducive climate in the set up. Ambiguity or lack of understanding the change process leads to confusion and chaos. It becomes the sole responsibility of the principal as the administrator to brief the people involved about the dimensions of change in every stage. Their thinking process has to be stimulated bringing a larger sense of receptivity to change rather than resistivity. Quite often, it has been observed that the sustainability of change and its effective operation essentially depends upon the motivation, enthusiasm and commitment of the members who are the real practitioners. Hence, the principal’s role in managing the whole process assumes its own importance because it certainly makes a difference in handling such a mammoth task. Timely appraisal of the development is called for in order to get proper feedback of the possible outcomes. An appropriate mechanism has to be devised in order to accomplish the whole task.

Innovation

The adoption or implementation part of an educational change usually termed as innovation. Innovations are conscious and deliberate changes. The word innovation as defined in the Oxford dictionary means 'novelties', the "alteration of what is established", a novel practice and change in established method or practice. Miles (1964) defines innovation as a "deliberate, novel, specific change, which is thought to be more efficacious in accomplishing, the goal system."

According to Bholla (1967) innovation is a "concept, an attitude, a tool with accompanying skills, or two more of these together introduced to an individual, group, institution or culture that have not functionally incorporated it before."

Rogers (1962) observes, "An innovation is an idea perceived as knew by the individual."

Barnet (1968) defines innovation as "any thought, behaviour or thing that is new because it is qualitatively different from the existing functions."

Another definition regards innovation as a "deliberate attempt to improve practice in relation to certain desired objectives" (CERI, 1973 p.36),
while an earlier study offers a similar kind of definition which states that "innovation means those attempts at change in an educational system which are consciously and purposefully directed with the aim of improving the present system. Innovation is not necessarily something new but it is something better and can be demonstrated as such" (CERI, 1969, p. 13).

The definitions offered by CERI (1969 and 1973) lay emphasis on the qualitative aspects of innovation, which implies that an innovation is not introduced simply for its own sake. This view has been supported and more explicitly presented by Noel's definition, which states that innovation is any change in one component of the education system, which is not made simply for the sake of change but with the intention of promoting improvements in the aspect concerned and having regard to the close interdependence of all such aspects in the systems as a whole (Noel, 1974, p-29).

Owne (1973) holds slightly different view. According to him, "innovation is seen something which is essentially new rather than a reordering of something which already exists in to a new pattern; change calls for a response but innovation requires initiative".

It is evident from all the above definitions that literature abounds with varied and sometimes conflicting definition of innovation. But there appears to be general agreement about three aspects: first, it is fundamental in nature; secondly, that it is deliberate and planned; and thirdly that there is the intention of improvement. The fundamental nature of innovation justifies that any innovation implies a change in culture of the school so that authority relationship, communication networks, status grouping, and even friendship cliques are bound to undergo a change. The second aspect emphasize that innovation is definitely a deliberate and planned attempt and third one signifies that the objective of every innovation is directed towards improvement in existing practices.

While, there is a good measure of agreement about the fundamental, deliberate and improvement aspect of innovations, the agreement in favour of its uniqueness is found to be less. However, the definition offered by Rogers
and shoemaker (1971) brings a consensus on the debate, which states that, "an innovation is an idea, practice or object perceived as new by an individual. It matters little so far as human behaviour is concerned, whether or not an idea is 'objectively' new as measured by the lapse of time since its first use or discovery. It is the perceived or subjective newness of the idea for the individual that determines his reaction to it. If the idea seems new to the individual, it is an innovation" (p-19).

The words 'reform', 'renovation' and innovation are frequently used interchangeably. But there are differences of meaning between them, which are important for an understanding of the process of change. Reform would usually mean a 'substantial change' affecting the social or political access of a considerable portion of the population to education, or the improvement of their status or opportunities. 'Renovation' would normally mean improving the existing system with some additions to bring it up to date. Innovation, which is most difficult of the expressions used, is interpreted variously by different authorities as well as in common speech. Some writers deal with innovation in education as a form of social change, education being predominantly a social activity. Others find it useful for the purpose of analysis to look at education as an input-output system and to apply concepts taken from the productivity processes. Under this treatment innovation is not any form of change but one brought in to existence as a result of discovery, or research and development, as in industry (Phillips, 1975).

Generally, in the field of education, an innovation is to create something new, which markedly deviates from traditional practices, which have been followed since a long time to influence education any one or more aspects of education at different levels. Innovations in education are adopted to bring qualitative improvements. The basis for an educational change is an innovative or creative idea of an individual or of a system as a whole. Innovation may be regarded as a species of the genus change. In a system they affect either one or more parts of the system and may get rejected, modified, accepted or maintained by the system. In spite of their utility and fruitfulness they are not
easily accepted. Quite often it is found that some innovation get diffused immediately while some other take much time to get diffused (Tripta, 1988).

**Characteristics of Innovation**

Initiation, development and diffusion of innovations by and large depend upon the characteristics of innovations. Barnett (1953) observes that “The reception given to a new idea is not so fortuitous and unpredictable, as it sometimes appears to be. The character of the idea itself is an important determinant.” In fact, the nature and characteristics of an innovation determines how effectively and judiciously it can be introduced in the system.

Several classifications of characteristics of innovations are presented in the literature and they have much in common. The classification proposed by Rogers and Shoemaker (1971) gives a more explicit set of characteristics, which has been summarized in the ongoing discussion. They identify five characteristics such as relative advantage, compatibility, complexity, trailability and observability. Their focus is on the potential user's perceptions rather than perceptions of experts or change agents, which affect the fate of innovations. They put this point in this word: Like beauty, an innovation exists only in the eyes of the beholder. And it is the beholder's perception, which influences the beholder's behaviour.

**Relative Advantage**

Relative Advantage refers to a way in which an innovation is considered to be better than the existing practices. The advantage may be better in terms of reduction in cost, saving time or effort, minimizing the degree of discomfort, or greater rewards. In some circumstances the focus may be finance or improving the existing practices or saving time, but usually in education the concern will be an improvement in pupil's learning. Various research studies give evidence that these characteristics tend to have a high degree of adoption rate. One problem associated with educational innovations and the characteristics of relative advantage is that demonstrating it in some of its dimensions. It might be fairly simple to demonstrate that an innovation will save money or even time, but it is impossible to show in advance that it will
improve the learning of particular pupils. This in fact, is a fundamental problems associated with innovation especially in the school set up.

It is already discussed in the preceding section of this chapter that when an innovation is introduced in the school system it will certainly affect the existing climate disturbing the equilibrium maintained by the system. It tends to be inconsistent with the existing value pattern, past experiences and present needs. An idea that is incompatible has the more chance of not being accepted by the potential user. On the other hand compatibility is more likely to engender feelings of security and involves less risk even makes the idea more meaningful to the user. The implications of these characteristics for the managers of innovations are that they need to be aware of the educational philosophy, goals and objectives very clearly. Along with this they must understand the abilities of persons to be involved in the process of implementation. If the present needs of a school require an innovation which is at variance with these, then much preparatory work is likely to be necessary before such an innovation can be introduced with any chance of successful implementation.

**Complexity**

Understanding the nature of innovation to be introduced has a significant role in its adoption process. Complexity is defined as the clarity about an innovation. More ambiguous the meaning and concept of an innovation, more difficult it is to be institutionalized. Lack of clarity has always been visualized as a serious problem in the school system. Difficulty of understanding arises sometimes because the innovation itself is a complex or not well explained to the potential user. Sometimes the advocates or sponsors of the innovation do not have a clear and thorough understanding of it. The complexity of an innovation, as perceived by the members of a social system, is negatively related to its rate of adoption. Hence, this aspect needs to be taken care of.
**Trailability**

There is a tendency in schools to eschew the trying-out of an innovation on a limited basis in order to establish its usefulness. This characteristic of innovation suggests a try out of an innovation in a piece-meal approach rather than in holistic approach. It signifies that an initial trial of the innovation ensures it usefulness in the system clearly showing the advantages and disadvantages. Trailability gives confidence to the user to accept the innovation smoothly and the diffusion process becomes easier. Teacher's reluctance to carry out evaluation is one of the main reasons for which a trial of an innovation is not undertaken in the school set up. There is no point in a trial unless it is evaluated and teachers are not enthusiastic about evaluation. In order, to be prepared for a trial the teachers need to be trained and reassured that it is not going to add complexities to their responsibilities. Careful monitoring and evaluation of the progress are also very essential. Otherwise the money, time and everything spent in taking the trial of an innovation will be a sheer waste subsequently letting the rigid and stereo typed practice prevail over the innovation and the innovation will fad away.

**Observability**

Observability is defined as the degree to which the results of an innovation are visible to others. The result of some innovations are easily observed and communicated to other, while some innovations are difficult to describe. It is believed that the observability of an innovation is positively related to its adoption. This view has been supported by the studies carried out by Dickinson (1975). He concluded that there was an acceptance of an innovation that could be seen to be working successfully in other schools and that it was innovation of this kind to which the schools studies were most susceptible.

**Types of Innovations**

Phillips (1975) has classified innovations in eight categories. Those are as follows:

1) *Structural Organizational Innovations*
Many educational institutions introduce innovations in their set up in order to bring some alteration in the existing practices. These alterations may be partially changing the faculty positions, promotion rates of the faculty members, distribution of educational opportunity, links with the community, changing the time schedules shifting the responsibility etc. This innovation helps to handle the problems of day to day functioning of the organization. Even it resolves some of the important managerial problems. Normally, the principal/head teacher is the most suitable authority to introduce these kinds of innovations. Decision making process of the principal/head teacher is considered to be most potential factor for introducing and copying up with these innovations.

2) Innovations of Newly or Rearranged Content

In the school system sometimes the head teacher or the principal rearranges the contents of the curriculum or makes changers partly. Reorganizing or partially replacing some components of the curriculum remove the boredom aspect giving fresh feelings to both the teacher and learner. In such kind of innovation neither the teacher nor the learner will have to put more efforts but the learning will be more enjoyable.

3) Technological Innovation

The technological innovations refer to all such new mechanical teaching aids' e.g. new audio-visual media, a teaching machines, film strips, radio, television, tapes, cassettes etc. As such the technological revolution has brought many innovations under its fold. The development of multimedia, in fact has accelerated the pace of learning giving maximum benefit to the learner and teacher both. This type of innovations commonly known as 'hardware' may be purely mechanical and may not be helpful in dealing with the fundamental problems but certainly help the students to make the process of learning easy and comfortable. To introduce such kind of innovation the entire set up needs to be techno-friendly having a clear awareness of the latest technologies. The users need thorough training and orientation of using the technologies to accomplish the task effectively. It will save time and efforts to
a considerable extent. One caution is that while introducing such innovation the cost part of it must be taken care of otherwise the problems may come in its adoption process.

4) Methodological Innovations

Methodological innovations include all sort of change in the methodology in teaching learning process. New methods of organizing the flow of information required in presenting educational contents e.g. by the use of instructional lesson cards, film strips, new types of textbooks etc.

5) Interactive Innovations

Change in the methods of interaction between teachers and students, e.g. team teaching, learning in some groups, unguided classes etc. are know as interactive innovations. Perhaps these innovations are most commonly practiced by the teachers in the school system.

6) Innovation in Examination Pattern

Several reforms have been brought out in the evaluation process in the field of education. The teachers in a school system can either adopt new pattern of examination developed by similar system or they can also evolve quite a new pattern on their own. If an evaluation pattern is adopted from other similar system then it must be implemented on trial basis. If it proves to be successful then it can be fully implemented.

7) Innovations related to Cost

It includes the cost effectiveness of an innovation. Before introducing an innovation the unit cost must be calculated. Normally, this sort of innovation is useful for the planners and policy makers. New methods of financing education call for a thorough assessment of the cost effectiveness.

8) Research related Innovations

It has been observed very often that the innovations in education largely are introduced in a reactive approach rather than proactive approach. To put it more succinctly; the innovations are introduced without systematic research. Innovations without research are more vulnerable to discontinue. They do not give successful results. Therefore in order to implement the innovations
research and development model needs to be given emphasis, so that it can pay its rich dividend to the clients.

**Models of Innovations**

Selection of appropriate innovation has a major role in its adoption process. Once the need for introducing an innovation is felt and the decision in that regard is taken, some necessary factors need early consideration. First, from where the particular innovation will come? How it will be introduced in the school system etc. There are a number of sources of innovations. There may have developed an innovation in a relevant area, or a group of members in the local community developing an innovation according to the felt need. If these source are not fruitful or no appropriate model of innovation is found than the teacher in the school will have to develop their own innovation. There are many instances that a school-developed model of innovation has more chance of being easily accepted and diffused. In the whole process, selection of an appropriate innovation seems to be more meaningful. It helps the potential user to get a feedback regarding the identification of possible strengths and weaknesses of the alternatives that are available (Nicholls, 1983).

Several models of innovations have been suggested by some of the pioneers of the change in education. Havelock (1969) reviews 4,000 studies of change in many fields including education and presents a model that may be helpful to the planners and policy makers. Havelock concludes that the principal models of dissemination and utilization of knowledge used by most people can be grouped under three categories: first, research, development and diffusion model, secondly, social interaction model and thirdly problem solving model.

**Research, Development and Diffusion Model (RDD)**

This model regards the process of change as a rational series of activities in which an innovation is discovered or invented, then developed, produced and disseminated to the users. The initiative in this model lies with the researchers. Although consumer needs may be implicit in this approach, they do not enter the picture as prime motivators for the generation of new knowledge. Research
is not concerned with a set of answers to specific human problems, rather with a set of facts and theories which generate ideas for useful products and services which are turned into prototypes that are tested and redesigned. Havelock identifies five major characteristics of RDD model as follows:

1. It assumes a rational sequence of activities from research to development to dissemination.
2. It implies that planning on a large scale has taken place.
3. It involves division of labour with a clear separation of roles and functions.
4. It assumes a passive consumer who is willing to accept the innovation.
5. It involves a high level of initial development costs before dissemination takes place.

Along with these characteristics the innovator must consider whether the aims and objectives, stated or implied, are compatible with those of the school. The congruence of an innovation with the philosophy, practice and ability of the teachers who are the real users must not be overlooked.

**Social Interaction Model (SIM)**

The main concern of this model is the way in which innovations are spread. It assumes that research and development is already carried out. The social interaction model emphasizes on diffusion, the movement of messages from person to person and system to system. In this model the innovation is brought to the attention of a potential receiver. It is the innovator who determines both the receiver and receiver's needs. The receiver reacts to the innovation presented to him and the nature of his reaction determines the subsequent stages. After being aware of the innovation if the receiver shows interest in it, there follows a series of stages which culminates in acceptance and rejection of the innovation. There the stages move through the process of social interaction with members of his group. Therefore, diffusion in this model depends largely on channel of communication. It is the model that emphasizes the importance of leadership, personal contact and social relationship. The characteristics of this model are:
1) The user or adopter belongs to a network of social relation, which largely influences his behaviour.
2) His position in the whole network is a good predictor of his rate of acceptance of new ideas.
3) Informal personal contact is a vital part of the influence and adoption process.
4) Group membership and reference group identifications are major predictors of individual adoption.
5) The rate of diffusion through a social system follows a predictable s-curve pattern (very slow rate at the beginning, followed by a long term adopter).

Problem Solving Model (PSM)

In contrast to other two models, the user in a problem solving model is seen as an active participant and not as a passive receiver. This model focuses on the need of the user. The stages in this process of change can be viewed as a cycle, beginning with a felt need, which is articulated as a problem. In this model the solution of the problem is undertaken by the receiver himself or with the help of suitable outside assistance, usually referred to as a 'change agent'. The characteristics of these models are:
1) User need is the paramount consideration.
2) Diagnosis of need always has to be an integral part of the total process.
3) The outside change agent should be non-directive, rarely violating the integrity of the user by setting himself up as the ‘experts’.
4) Internal resources already existing and easily accessible within the client system itself should be fully utilized.

While the innovations developed or disseminated in the RDD and social interaction model have their origins outside the particular school in which they might eventually be adopted, the Problem solving model emphasizes on the school based innovation. The teachers are supposed to have a high level of commitment for such model. The problem-solving model is known to be most advantageous for the school system.
Schon (1971) presents another model of innovation. He argues that the loss of stable state means that the society and its institutions are in a continuous process of change and that we must learn how to understand, guide, influence and manage these transformations. He adds further that it is not enough to transform our institutions in response to changing situations. It is essential to invent and develop institutions which are 'learning systems'. That is the system capable of bringing about its own continuous transformation. Schon presents two models of innovations such as Centre-periphery Model and Proliferation -of- Centre Model.

**Centre-Periphery Model (CPM)**

Centre-Periphery Model rests on three basic assumptions:

1) The innovation to be diffuse exists, fully realized, in its essential trials.
2) Diffusion is the movement of an innovation from a centre to its eventual users.
3) Directed diffusion is a centrally managed process of dissemination, training and provision of resources and inventions.

The effectiveness of this model depends on the level of resources and energy at the centre, that number of points at the periphery. The scope of this model varies directly with the level of technology governing the flows of men, materials, money and information and depends upon the system's capacity for generation and managing feedback. Failure in this model, takes the form of ineffectiveness in diffusion, distortion of the massage, or disintegration of the whole system. Failure occurs when the system exceeds the resources or the energy at the centre, overloads the capacity or mishandles feedback from the periphery.

Schon's conceptualization throws light in to the issues, which can be studied by examining the way in which many of the schools operate. In his view for setting an innovation, a team is constituted at the centre and they, with the help of the teachers, develop the innovation which after trials, gets disseminates to schools, the points at the periphery. Training is an important factor of such task to be smoothly accomplished. Though there are a number of
difficulties associated with this model of innovation, still found to be effective in many of the schools.

In fact, the Proliferation Model is an elaboration of the Centre-Periphery Model designed to extend the limits of the simpler model and overcome the sources of failure that are inherent in it. This model retains the basic centre-periphery structure but distinguishes between primary and secondary centers. Prime centers support secondary centers, which engaged in the diffusion of innovations, thus increasing both reach and efficacy.

Selection of an appropriate model, as has been discussed at the beginning section of the models of innovation, has its own significance in introduction, dissemination and adoption process. It is not unusual for an innovation to come to the attention of a teacher or teachers and than a decision to adopt it. Whatever the sequence of events, knowledge of models is certainly helpful to the innovators. Such knowledge can help the innovator to identify strengths and weaknesses inherent in the innovations.

**Profession: The Concept**

The traditional sociological approach to the study of profession has been to identify the characteristics/traits which are held to distinguish professions from other occupations and to use these collectively as a model against which to assess the degree to which various occupations approximate to professions. The list of such characteristics/traits have been attempted by, for instance, Parsons (1939), Tawney (1948), Greenwood (1957, 1988), Carr-Saunders and Wetson (1964), Moore (1970), Pavalko (1971), Elliott (1972), the limitations of such an approach were acknowledged, by the later writers (Piper, 1994). Another group of eminent Sociologists led by Johnson (1972) and Friedson (1983) argue that it is more enlightening to regard the notion of a 'Profession' as a changing historical concept, with particular roots in industrial nations, strongly influenced by Anglo-American institutions. Again this concept was criticized by another group of sociologists, because of its 'Anglo-American' attributes and to avoid this peculiarity the term 'expert occupation' was used by them as an alternative. One of the problems with listing the traits/characteristics
was that there was a little consensus among various authorities on a definitive list. For example, Millerson (1964), after a careful examination of the literature, listed no less than twenty three ‘traits’. Some of the common traits which have been most frequently used by almost every group of sociologists are as hereunder:

1. Possession of a skill based on theoretical knowledge.
2. Provision of training and education.
3. Testing competence of members.
4. Organization.
5. Adherence of a code of conduct.
6. Altruistic service.

However, this generic concept of profession limited its scope to a few vocations like law, medicine and divinity. But changes in the society associated with the rapid industrialization process brought about some major alterations in the structure of these professions. Various occupational groups in their quest for an occupational identity demanded to include their respective occupations in the list of Professions as a result of which the list of professions expanded (Kuper and Kuper, 1985).

**Modern Characteristics**

With the changing conditions there was a restructuring in the concept of the professions that attributed many vocations the status of profession. During 1950’s and 1960s many sociologists used this checklist approach, suggested by early experts, to examine a variety of occupations, including social work, teaching, nursing and librarianship, in order to see whether such occupations could properly be regarded as professions; those occupations which exhibited some but not all the characteristics variously held to constitute the defining elements of a profession were termed as semi/quasi or para professions (Kuper and Kuper, 1985).

In contrast to earlier literature, recent work has been more critical and has tended to focus on the relation of professions to the market and on the analysis of the professional power. For instance, Berlant (1975) sees
professionalization as a process of monopolization, while Larson (1977) sees it as an occupational mobility based on securing control of a particular market. However, the dominant influence in the modern times has probably been that of Johnson and Freidson who held professional power and autonomy Central to professionalism. While Friedson holds the view that 'professional autonomy' is central axis to a profession, Johnson holds that 'practitioner client relationship' is central to the profession. Both the views ignore the specialized knowledge and altruistic behaviour as the essential characteristics of a profession. However, synthesizing the traditional and modern views on the characteristics of a profession the investigator has prepared a comprehensive list of characteristics as given below:

1. The profession must have a science of its own backed by a well organized body of theoretical knowledge continuously expanded by research and innovation.

2. The profession requires extended professional preparation i.e. a specific period of training and continuing education thereafter.

3. A broad range of professional autonomy for both the individual practitioners and for the occupational goal at a large.

4. Professional accountability that emphasizes an acceptance by the practitioner of broad professional responsibility for judgements made and acts performed with the scope of professional autonomy.

5. A legal procedure of licensing or registration of members before permitting to profess.

6. It is essentially a social service that emphasized on rendering social service other than the economic gain to the practitioners.

7. It has a higher social status in terms of recognition by the public and better service condition for its practitioner.

8. The profession must have an association of its members into a closely knit group with a high quality of communication among the members.

9. It must have a series of standards and code of ethics to be adhered by the members.
Teaching as a profession

When matched against the above mentioned characteristics teaching fulfils most of them to some extent but to a lesser extent than other recognized professions like, medicine, law and architecture do. Therefore, it falls into the category of quasi or para-professions. However, we may examine the important characteristics of teaching in the light of the characteristics of profession listed above.

The first characteristic suggests that a profession must have a well organized knowledge base of its own which is continuously expanded by research and innovations. Teaching fulfils such a characteristic because the activities included in teaching process are essentially intellectual in nature and it has a theoretical structure of knowledge at its background. While transacting the curriculum the teacher not only produces facts and figures/acquired earlier but also analyses, criticizes and consolidates ideas on the basis of some well established theories and generalizations developed by continuous research.

The second characteristic emphasizes on a specific period of training or professional preparation followed by continuous in-service growth. Usually before getting in to teaching profession there is provision of under going a specific period of training for the teachers. Even apart from the pre-service training there are in-service training programmes for the teachers especially designed to update their skills and prepare them to keep abreast of the change that ushers in the academic stream. Hence teaching fulfils this characteristic.

The third characteristic of a profession suggests a broad range of professional autonomy which the practitioners of teaching profession usually enjoy along with classroom processes; a teacher involves himself or herself in self study for updating their existing knowledge. They contribute to their respective fields in terms of publication; attending and organizing seminars, conferences and involve themselves in other intellectual pursuits. There is no outside interference in the job of a teacher. Therefore to a larger degree the criteria are fulfilled.
The fourth characteristic demands professional accountability. The teachers are responsible for covering the curriculum within a specific time frame. Apart from teaching, setting examination papers, being invigilators, paper checking and publishing the results are various responsibilities which need to be done as per pre-fixed academic schedule, and within a specific time frame. Hence it is well recognized that they are accountable to the task.

The fifth characteristic demands a legal procedure of licensing which teaching very much adhered. In order to join teaching there is a procedure of training, as mentioned earlier, followed by an appropriate procedure of certification. Without a certificate of training that too from a recognized institution one can not join teaching profession.

The Sixth characteristic emphasizes on social service or a service that is altruistic in nature. Since, time immemorial teaching is basically considered a social service, a service rendered to the clients for their welfare. Recently the economic aspect of it has been over emphasized because of the change in various aspects of the society. In spite of this the status of a teacher is well recognized and highly valued keeping a side the economic gain. In the early days it was existed in the form of "Guru Dakshina" which has taken a shape of a salaried job in the recent times. Even the economic aspect is involved there still the service aspect of it can not be ignored.

As per the Seventh characteristics the teacher has a special status in the society, a well recognition of his job by the public. The governments of countries world over are formulating policies to uplift their service condition and betterment that automatically recognized the unique status of the profession.

The eighth and ninth characteristics suggest that there must be a professional association and a set of professional ethics to be adhered by the practitioners of a profession. Over the time there have many teacher associations at various levels those facilitate the activities of teachers. They also provide well organized platform to have a high level of communication along with providing opportunities to realize their individual and organizational
goals as a whole. There is a set code of ethics to be followed by the teachers, for example, a few years back National Council of Educational Research and Training prepared a model code of conduct for the school teachers. Though there are many cases where the teachers are found being involved in unethical practices still in majority of the cases, code of ethics is maintained. In fact there has been continuous deterioration of ethics in other recognized professions also.

To conclude the discussion it is relevant to mention, that the status of teaching as a profession have generated enough debate among the academic world in the recent times. Many of the established scholars though termed it as a semi or para profession, there is a consensus by and large that teaching is a full-fledged profession as it fulfils most of the characteristics of a profession to some extent.

**Professional Development of Teachers at the Elementary Stage in India**

Professional Development of Teachers at the Elementary level started gaining impetus only in the last few decades, particularly after the recommendations of Kothari Commission in 1964. But it took a different turn after the implementation of the National Policy on Education (NPE, 1986), which pleaded for overhauling the teacher education system by recognising the inseparability of its pre-service and in-service components. The efforts for adoption of innovative professional development programmes were intensified only after the Delhi declaration of Education for All (EFA) 1994. Since then quite a few innovations have been introduced in teacher education at national level. Among these programmes Mass Teacher's Orientation Programme (MTOP), Programme of Mass Orientation for School Teachers (PMOST), Special Orientation Programmes for Teachers (SOPT) etc. are some of the innovations introduced in national level.

After the adoption of NPE-1986, the Government of India formulated a scheme known as "Programme of Mass Orientation of School Teachers' (PMOST), and implemented it throughout the country with the help of NCERT and SCERTs. The major objective of the scheme was to generate awareness
among teachers concerning thrust areas of the National policy on Education. The training materials for the programme were prepared by the NCERT. Initially, training was imparted to some Key Resource Persons at the state level with the purpose that they will train the Resource Persons in their own states and the Resource Persons will conduct training programmes for school teachers. The target of the scheme was to cover 5 lakh teachers per year throughout the country. During 1986-1990, approximately 17 lakhs teacher were provided training under the scheme and it received a widespread appreciation.

Considering the number of teachers aspiring for in-service training and inadequacy of the existing provision a centrally sponsored scheme namely special orientation programme for teachers (SOPT) was introduced in 1993-94. The main purpose was to provide in service training to all primary teachers in the country within a reasonable time frame. Till the end of 1997 around 1.5 million teachers were trained under this scheme (Arora and Panda, 2000).

Apart from these, the in-service training programme are also conducted at the state level under various projects viz. Andhra Pradesh Primary Education Project in Andhra Pradesh, Shikshyakarmi Project in Rajasthan, Shikshak Samakshya Project in Madhya Pradesh, Bihar Education Project in Bihar etc. These programmes are supported by the Government of India. In fact, these projects have a component of strengthening the professional skills of the teachers.

Though some innovations introduced in India had shown their effect on the quality of in-service teacher training still no significant improvement was witnessed. Even many innovations could not sustain after their introduction. Various reasons could be attributed for their failure. There were no researches conducted before introducing the innovations. The conditions for introducing innovations were not conducive. Sometimes the organisational inertia or resistant-to-change on the part of administrators also stood as barrier to the innovations. The governments in both centre and states could not provide adequate fund to implement the innovations. Dearth of skilled manpower and
time constraints were also the major barriers which hindered the successful introduction of innovations. Public resistance is also another major problem which play an important role in preventing the innovations. Since the community was not involved in formulating or planning the innovation, they could not understand its significance. It is only in the present decade that there is a growing realisation among the teacher educators to understand the nature of innovation and the set of conditions in which it has to operate. After all, an innovation works in the context of some set environmental conditions not in isolation. Therefore, all the individuals who are the part of implementation should clearly understand the innovation, its nature, rational, and operating conditions before its introduction.

**Review of Related Literature**

Unlike many other areas there has been very few researches conducted in the area of innovations in education. Though there are several studies on this aspects conducted abroad, their number in India is scanty. In fact the studies conducted abroad are by large based on sources, adoption, dissemination, promotion, continuance and discontinuance of innovations. As compared to this, the studies conducted in India have more focused on the implementation aspects of the innovations. This is due to the fact that in India researches in almost every field are reactive rather than proactive. Practically, no research based on scientific inquiry, followed decision making (Powar, 2000). This has urged the researchers to focus on the implementation aspect and the efforts have been made to assess the impacts of the innovations. A few studies have been conducted on the impact of the innovations on improving the professional efficiency of the teachers. However an attempt has been made by the investigator to review maximum available studies conducted in this area in India and a few abroad. The studies cited in this chapter are presented in the following sequences:

- Researches on Innovations
- Researches on Professional Development
- Researches on Sustained Change
Researches on Sustained Change and Professional Development

Innovation

Subharao (1967) conducted a study to identify the factors that contribute to the promotion or inhibition of educational innovation. The study identified that syllabi, classroom instruction, use of modern audio-visual aids, hobby classes, examination reforms, evaluation and internal assessment were the major innovations practiced by the schools. The sources of innovation are extension service department, Headmasters, Seminar/ workshop, inspectorate and training college personnel, educationist, books, and journals. The promoting factors are i) regular staff meeting ii) delegation of responsibility to various people iii) encouragement to teachers to take up in service training, iv) experimental project, v) action research.

Bhagia (1973) aimed at identifying the characteristics of innovations that influenced the process and degree of their diffusion in schools. The findings reflected that coefficient of correlation between diffusion and other independent variables, such as communicability, simplicity, divisibility, efficiency, structuralization, academic effectiveness, prestige, relative advantage, facilitation, meaningfulness and practicability were significant beyond .01 level of confidence, whereas adjustability, associability, flexibility, burdensomeness, cost economy, pleasure, time economy, compatibility and independence were not significantly related to innovation diffusion.

Balasubramaniam (1979) conducted a critical study of the extent of the strategies that were adopted to install innovations in high schools. The result stated that the research - development diffusion and social interaction strategies had significantly a wider application than problem solving and linkage strategies. Social interaction and linkage strategies significantly correlated at a higher level than the other strategies.

Koul (1979) made an effort to scale some significant innovations in examination system and the major findings of the study were i) certain innovations like introducing the grade system of ranking, supplementing essay type examination with objective type examination, semester system and...
supplementing external examination with periodic internal assessment, were in the top regions of the scales of teachers and students. The innovations like open book examinations, use of computers and mechanical devices in preparing award rolls, scope for re-evaluation of answer books and spot evaluation of answer books, did not get importance from teachers and students. Both teachers and students gave equal importance to innovations such as orientation of paper-setters and evaluators.

Patel (1979) studied the innovative proneness of secondary and higher secondary school teachers and suggested that there were twenty one components of innovative proneness viz. individualization curriculum organization, teaching resources, internal school organization, staff development, school community relationship, administrative support, staff norms, progressiveness; venturesomeness, teaching - learning process, attitudes towards innovations and change- proneness, professional satisfaction and experience of teachers.

Sharma (1979) investigated the characteristics of the various level of educational resource system and the process of developing and communicating innovations. The study revealed that the characteristics of the resource system affected the level of adaptation of innovations; the linkages between educational resource systems and their clients affected the level of adaptation of innovations. All types of educational resource systems had a high degree of willingness and readiness to help other institutions in the development and dissemination of innovations. They were found to be influenced by their clients’ feedback. The capacity of the users, reward, proximity and synergy also influenced the level of adoption of innovations.

Satyavati (1980) tried to find out the process of adoption of successful innovations and the process of discontinuance of innovations. The findings suggested that i) there were seven stages in the process of successful adoption of innovations and discontinuance of innovations. These are: problem awareness stage, search for solution stage, knowledge about innovation stage, persuading influence stage, decision making stage, adoption stage and
evaluation stage. ii) the source of awareness were the principal, teachers, pupils and parents iii) the teacher received ideas from within system, NCERT, Journals, colleges of education and other institutions iv) the majority of the principals stated that they had a clear understanding about the innovation and all the principals had framed the objectives. v) most of the schools evaluated the innovation and on the basis of this evaluation the innovations were adopted or discontinued. vi) the specific factors accounting for discontinuance were: dissatisfaction with its performance, divided opinion among the staff members, lack of sufficient finance lack of support from society, wants of convincing source, and extra load of work involved. vii) barriers to change as checked by the staff in private aided schools were want of time, heavy syllabus, inadequate resource of magazines and journals, absence of suitable agency to train the staff for professional growth, lack of incentives on the system, parental interference, bear of additional work, lack of appreciation from the superiors, and vested interests of the staff outside the school.

Ganapathy (1982) conducted a study of decision making process in relation to innovation and change in schools and concluded that the decisions were not based on subjective judgement. The decision making process basically took place at two levels. At the first level the headmasters communicated his ideas of innovation and tried to get his ideas translated into action through his teachers. Secondly, the head masters tentatively decided to introduce the innovation if the evaluation was found favourable and cooperation of the staff received.

Bagga (1983) made a survey of innovation in schools of Delhi and Haryana and the findings were i) The extent of diffusion in Delhi was the maximum in case of book banks, work experience, pupil-teacher association, internal assessment and education through radio and television. ii) The extent of implementation of Innovation in school of Delhi and Haryana was satisfactory. iii) Teachers of both the schools spent more times on its implementation. iv) There was a positive relationship between the extents of teacher participation in the innovations and the extent of their implementation.
v) Educational authorities of both Delhi and Haryana showed a positive attitude towards innovations.

Chauhan (1983) identified the characteristics of innovative educational administrators of Gujarat state and the major findings stated that the innovative educational administrator was willing to participate in community affairs, possessed risk-taking behaviour, had self-confidence ability to recall and was willing to expose himself to interpersonal communication. He was self-reliant, honest, enthusiastic, self-disciplined, open-minded, an initiator, emotional and accurate and judicious in approach. He could evaluate himself in comparison to others, had a sense of equality and faith in voluntary cooperative action, had self-understanding, appreciative attitude, ability to convince and ability to represent.

Mohana (1983) prepared case studies of innovative secondary schools and made a distinction between innovative and non-innovative schools. The major findings of the study were i) A dedicated head, wise supervision of the system by the authority, favourable tradition, and autonomy for the adoption, unit in the planning of the process of adoption were the important factors found to create a favourable system effect on the individual members of the system. ii) The authority successfully played the polymorphic or monomorphic opinion leadership roles for promoting innovative practices in their system. iii) The result of the feedback analysis were given weight for making necessary modifications in the adoption process. iv) The barriers pointed out by the adopters in the innovative schools were universal in nature, viz. heavy syllabus, examination oriented and lack of time within school hours. v) The students of innovative schools were found to have high academic achievement. vi) The heads of innovative schools were found to score high on leadership behaviour inventory. vii) High innovative schools showed a clear tendency towards openness in organizational climate.

Rajagopalan (1983) conducted an inquiry into certain aspect of selected innovations in education and concluded that Headmasters, NCERT, SCERT, Department of Education were three major sources of the origin of innovations.
The findings also revealed that a few teachers only knew about the primary source of an innovation. Most of the teacher knew about an innovation from secondary sources. Teachers felt that the innovation was a probable solution to their problem. It also suggested that administrators should provide adequate training to teachers while introducing new practices. Before the innovations are introduced, teachers and headmasters should be involved in adequate discussion about the need for introducing the innovations and the problems, which would be solved through the introduction of these innovations.

Lalitha Kumari (1984) observed whether innovative classrooms affected the classroom climate and its components and the viz. pupil psyche, social relationship and the teacher behaviour. The major findings of the study were that the high innovative classrooms had more positive choices and the low innovative classroom had low group acceptability and cohesiveness. The teacher behaviour in high innovative classrooms varied with positive signs.

Methi (1985) investigated the relationship between organization climate of school and diffusion of innovation and drew the conclusions that i) 'paternal' climate was the most frequently perceived climate for the successful diffusion of innovations followed by 'controlled', autonomous', open', familiar' and 'closed' climates. ii) All the dimensions of diffusion of innovations were found positively significantly related with the school climate of Government urban and rural schools.

Callister (1986) investigated the effect of innovative technical change on an elementary school and arrived at the conclusions that i) The teachers reacted to the introduction of the computerization programme with resistance that was mostly implicit and unarticulated but were informed by their understandings of role and power ii) As a result of this passive resistance there was little change in the teachers perception of role, power and control or interactions. Current research also suggested that teachers tend to welcome technical management systems although these contribute to teachers disliking and loss of power.

Fuller (1986) designed a study to investigate faculty perceptions of organizational climate and its relationships to the implementation of an
innovation in selected community colleges and found that i) any relationship between the innovative and non-innovative faculty and colleges and organizational climate are only weekly supported. Two subscales of the organizational climate questionnaire viz. hindrance and disengagement, suggested that innovative faculty in innovative colleges and non-innovative faculty in non-innovative colleges feel more loyalty to their institutions than when college and faculty innovativeness are not matched.

Sullivan (1986) carried out a study to make an overview about i) how innovation characteristics related to institutional interaction with better information; ii) how the perceived innovation characteristics were related to the extent of change in materials; iii) interaction related to the use and change in the innovations and iv) what were the resources and obstacles were that affected the use, and change in the innovation. Findings of the study showed that more interaction was positively related to use of better information and to the extent of change in materials. Consistent with previous research, several significant relationship were found between perceived characteristics of the innovation and the extent of the change in the information materials: Cost (money and staff time), relative advantage, complexity (case of use), reversibility (can be discontinued), ownership and adaptability. One of the strongest findings was that interpersonal linkages showed significant relationships in four of the eight change areas, whereas informational linkages showed no relationships. Two factors: top administrative support and local commitment to changes in materials, related favourably to seven of the eight areas. Lack of money and staff-time were major obstacles.

Harriott (1987) conducted a study to measure the impact of five organizations and programme innovations in 10 teacher training institutions in Jamaica, West Indies, namely student participation in governance, faculty and parent involvement, in-service programme for teachers and alumni; and student teacher internship programme. This study also examined significant difference in the levels of (a) participation in and (b) difficulties pertaining to the five areas of innovations among respondents grouped according to status (teachers,
administrators, and faculty) and school location rural, suburban, and urban). The major findings indicated that administrators were more likely to perceive greater student participation in governance than either teachers or faculty. However, teachers tend to perceive greater difficulties with respect to student participation in governance than administrators and faculty. Administrators were more likely to encourage faculty involvement in decision-making than either teachers or faculty, and administrators were more likely to support in-service programmes for teachers than the teachers themselves.

Hussain (1987) conducted a study to find out if there was any relationship between faculty innovators' perceptions of departmental support and adoption of instructional innovations at Michigan State University. Major findings of the study indicate that the respondents did not perceive a significant relationship between financial support and adoption, policy support and adoption, technical support and adoption, and Chairman's support and adoption. The general conclusion drawn from the findings of this study is that departmental support is not effective in influencing innovation-adoptions behaviours of faculty members, especially when they are highly motivated for change. These faculty members usually take existing condition.

Munol (1987) Conducted a study to examine the perception of elementary teachers associated with the potential of innovative personnel practices to affect job retention and job satisfaction. Findings indicated that positive perception of practices were related with teacher job-satisfaction level and the specific characteristics of each practice. The socio-economic level of the school and the experience of the teachers were only moderately related with job satisfaction and the positive perception of the practices. From the theoretical point of view, the findings indicated that all teacher subgroups were functioning at a high level of need as defined by Maslow. These teachers, including the teachers who left the profession, preferred practices which incorporated a combination of motivation satisfiers and hygiene satisfiers, as defined by Herzberg, to meet their needs. Current teachers preferred intrinsic
rewards associated with self-esteem and acquisition of new knowledge and skills.

Murphey (1987) made a study on the impact of reforms and innovations in some selected high schools and concluded that the organisational innovations sustain when the board of education and faculty members are supportive and committed to the changes. Teacher Selection and Training are key ingredients in the success of organizational innovations. School organization which requires teachers and students to get to know each other is perceived as contributing to students’ achievements. Discipline problems are minimal when education is working.

A case study of organizational innovation in higher education was conducted by Collins (1988) in which he examined the relationship between innovations and selected organizational variables of an academic support programme (ASP). The findings suggested that there were relationship between the initiation and implementation of organizational innovations and the institutional environment, between the initiation and implementation of an innovation and its internal organizational linkages. In addition, the process of innovation in an educational organization is also examined. The findings suggest that stages of the innovation process generally progressed in the order specific by the model used for the study.

In another case study on implementation of an innovation in an urban school of United States of America, Carrasco (1988) found that policies were adopted to ensure equality of education. Poor implementation of policies can lead educators to think that the policies themselves are at fault in not producing valuable outcomes. Teachers make choices based on formal, informal and individual barriers and facilitators. Sound policies fail to achieve desired effects, if poorly implemented. Study to enhance knowledge about implementation of innovation may lead to less teacher resistance and more responsive implementation of innovation in future attempts to improve schools practices.
Mills (1988) in an analysis of academic innovation and change in organizational culture, found that the university allowed the innovations and reforms to be instituted, but they did not carry the same meaning for the rest of the organization that they had for founders and practitioners. They did not become symbols for rest of the organizations of the values, assumptions, and practices of the innovators. Only with the core curriculum reform accepted by the institution reflect slight changes in the organizational culture.

Mucci (1988) made an effort to assess a regional vocational schools organizational climate and its staff members 'willing to innovate' in order to determine specific organizational development strategies that would enhance the innovative behaviour of the schools professional staff. The findings suggested that there was no relationship between the climate perception and 'willingness to innovate' and the sample 'willingness to innovate' was not related to sex or professional role of the subjects. In general, this school was found to be below average on social work climate and above average in terms of the staff's 'willing to innovate'. Specific organizational development strategies such as survey feedback, action research and education and training activities were also discussed. Of particular importance was the discussion of leadership and management theories that enhance employee empowerment and creativity.

Simpson (1989) in an analysis of innovative strategies in Texas and Michigan Primary Schools describe that the benefits of collaboration include a reduction in teacher isolation. Teachers talk to each other about teaching. It increased the professional confidence and a strengthened commitment to improve practice. Their leaders are initiators and change facilitator who possess a strategic sense which combines daily routines with long-term visions and proactive planning. Increased participation and collaboration are dependent on voluntary participation and sanctioned time for the process. The marginal nature of the Texas innovation seems to facilitate its introduction in the organization. The Michigan campuses illustrate change over time in one setting and the theories of transition of the other. They seem to have
established ceremonies and rituals which support circularity needed to keep the change process vibrant.

Bradley (1992) in an attempt to gain better understanding of programme implementation at the local school level and provide further insight into teachers receptivity to change. The main focus of the study was the events and factors that in teachers’ perception attributed to change in their behaviour during the implementation of an innovation. The findings concern with the teacher change literature, which states that teachers need from twelve to eighteen months of using an innovation to become routine users. The in-service design factors questionnaire identified basic agreement about what teachers believe greatly influenced their behaviour to change and to change their beliefs about an innovation. It also stated that the innovation has a positive effect on student achievement. The innovation is found to be significantly related to the in-service training provided during the first years of programme implementation.

Blinkiewicz (1994) conducted a case study of school restructuring: Interim outcomes and change process. Based on the study findings six categories of interim outcomes emerged from the data. These categories were i) Vision / Values; ii) Roles/Relationships; iii) Decision making; iv) Policy alignment; v) Resource allocation; and vi) Core technology.

Cumber (1994) analyzed receptivity to innovative change within an educational institution. The innovation was Focus on Educational Improvement (FEI) in Brookings, South Dakota. This innovation involved setting aside planning time for teachers to work towards modernization goals. The findings determined that during the academic year the majority of the teachers did not change their self-assessment of innovativeness. This study also looked at the following individual characteristics on discriminators of receptivity to innovative change: membership in formal organizations, level of participation in formal organizations, age, education, income, years within the school district, and sex. Age was considered to be a significant positive factor. Membership in formal organizations was the only variable with a significant
positive relationship with attitude as to whether the FEI innovation should continue. Rogers and Shoemaker’s perceived characteristics of innovations assessment categories relative advantage, compatibility, observability, complexity, and trialability were used to assess the extent to which the perceived attributes of the FEI innovation affected teachers attitudes and receptivity toward FEI compatibility showed a significant negative connection with opinion about FEI, while observability had a significant positive relationship.

Anderson (1995) conducted a study with the purpose to determine the process a community college undertakes when institutionalization of ACLAIM, community based programming at two North Carolina community colleges and stated that the college mission, the President, the Governing Body, faculty and staff and the community leaders as key individuals in the process and the college as the main entity. Change process that were used by district include reading about researching and restructuring, visiting others restructuring school systems, developing a shared vision of the future, offering a variety of personal development opportunities, proving time for collaboration and practicing new roles and instructional strategies through a reallocated time plan and applying quality principles. The use of quality principles expands what is known about systematic change as few schools have experimented with quality.

Waddell (1996) measured the impact of change facilitator style (CFS) on elementary teachers’ stages of concerns (SOC) about adopting outcome-based education (OBE) in their schools and the findings support the Concerned Based Adoption Model (CBAM) theory that the initiator style is more elective at impacting SOC and improving success in adopting an innovation. Teacher demographic variables do not affect SOC or CFS. It suggests effective leadership could impact teachers’ concerns.

Swain (1996) investigated the growth and change of elementary teachers involved in a year-long professional development programme of mentorship and peer support and found that tenders of professional development should take an inquiry stance towards the transformation processes of the teachers; that
professional development should include a support network in which teachers can voice with honesty their concerns, goals, and frustrations; and that the teachers as orchestrator of change must be honoured as a viable vehicle of professional development. Conclusions were also stated that teachers must be given opportunities to participate professional development programmes. They must be trained on how effective strategies are modelled and how decisions are made, how the strategies can be interpreted in their own classrooms. The teachers should have opportunities to read and react to professional literature and researches in their own field of knowledge.

**Review**

A close perusal of the studies on innovations suggests that the extension service departments, headmasters, seminars, workshops, training college personnel, educationists, books, journals and the research organisations were the main sources of innovations Subharao (1967), Satyavati (1980) and Rajagopalan (1983). The studies conducted by Subharao (1967), Bhagia (1973), Patel (1979), Satyavati (1980), Bagga (1983), Fuller (1986), Sullivan (1986), Hussain (1987), Cumber (1984), Waddel (1986) revealed that regular staff meeting, delegation of responsibility, encouraging teachers to attend professional training programmes, community support, nature of the innovations, individual efforts of the staffs, institutional climate are the most responsible factors for the promotion and diffusion of innovations. Nature of innovations was studied by Sharma (1979), Callister (1986), Methi (1985), Sullivan (1986), Munol (1987), Mucci (1988). The findings suggested that relative advantage, compatibility, observability, complexity, trailability, willingness of the staff etc. are the major characteristics of the innovations which mainly determine their adoption, promotion and diffusion. The studies of Lalitha Kumari (1984), Callister (1986), Harriot (1987) concluded that high innovative classroom had more positive choices and the impact of innovations were well felt whereas the low innovative classrooms had low acceptability and cohesiveness, giving less impact of the innovations. The teacher behaviour in
High innovative classrooms were also found to be positive than the low innovative teachers.

**Professional Development**

Dennis (1995) the executive director of the National Staff Development Council (Southern New England) conducted interview to measure fine criteria for programmes designed for elementary teachers. A major finding in the study was that site-based professional development is imperative to ensure the involvement of teachers, the attainment of site goals and needs, and the designing of follow-up activities was an on going effort towards whole-school improvement.

Rockenbach (1997) designed a study to investigate the attitudes towards mathematics of both pre-service and in-service elementary teachers and the ways in which they respond to questions involving the use of manipulative and issues including the training in the use of manipulative. The data indicates that many pre-service teachers are unsure about what a manipulative is and have not had much exposure to manipulative. The data also showed that 100% of both of the groups planned on teaching with the use of manipulative in their mathematics classrooms, and the training in this use should be in pre-service training and continue during in-service training.

Smith (1998) proposed to ascertain if Computer-Enhanced Instruction (CEI) professional development model of one middle Georgia School System led to the improvement in teachers self-efficacy, outcome expectancy, and use of computers for instructional purposes. The conclusions drawn were that personal goal-setting is an effective part of a computer staff development Model. School leaders should consider teacher self-efficacy when designing computer staff development programs.

Dewait (1999) examined the factors that are significant in professional staff development that contribute the efficacy of elementary teachers use of computer technology in the elementary classroom. The results indicated that the elementary teachers use computers to manage the classroom and to integrate technology into several of the content areas. The variation found in
professional development include: use of trial and error, learn through coursework taken at colleges or universities, and/or support others or receive personal or expert support as significant methods of learning how to use computers.

Lawrence (1999) measured the factors influencing elementary school classroom teachers, use of computer technology in instruction. Findings stated that using computers, as well as those making decisions about the use of technology in elementary school, shared a common ideology that technology is valuable in classroom. Secondary teachers surveyed held strong opinions and expressed emotional reaction to both computers and their impact on the teaching environment.

Ottaviano (1999) conducted a qualitative case study to determine the extent to which teacher professional development affected principal and teacher perceptions about improvements in classroom practices and pedagogy. The findings provided information on the degree to which there is a relationship between changes and improvements in the classroom as a result of professional development initiatives.

Stewart (2000) made an evaluation of professional development training for elementary teachers in urban and Native American School using design technology and the learning cycles. The findings showed that the urban school teachers differed significantly from the Native American School teachers on many aspects, yet there were no significant difference between the gains made by two different groups of teachers. The TIES (Technology and Invention in Elementary Schools) training also included many factors from organizational change theory which were considered to promote the implementation of change.

Vartanian - Gibbs (2000) focused on the critical issues related to the continuing professional development for elementary teachers. The study concluded that power, partnership and professionalism must be part of the design, development and implementation of need based teacher professional development. The researchers encouraged school districts to form a staff
development committee to serve as the facilitators of teacher professional development.

Review

Professional development of teachers and its role in improving school practices was studied by Munol (1987), Simpson (1989), Bradely(1982), Dennis(1985), Dewait(1999), Ottaviano(1999). The studies concluded that positive perception of teachers, job satisfactions, positive reward by the authority, professional confidence, commitment of the staff, long term vision, pro active planning, receptivity to change, well spelt goals etc. are major factors which lead to a well designed professional development programme. And these factors coupled with professional development of teachers influenced the improvement of school practices. Further, Dennis (1995) also found that sight based professional development programme yields positive results, subsequently leading towards healthy classroom practices. Rockenback’s (1995) study found that the attitude of the teachers is the most vital factors that contribute to a successful development of programme.

Sustained Change

Bhagia (1975) proposed to assess the nature of innovations made in schools and training colleges. The findings showed that the teachers were not having a clear picture of their role performance and the objectives of the various innovations. Teachers needed help from different persons in acquiring the techniques and behavioural skills required to confirm to their specifications.

Singh (1977) conducted a study to find out how far these adopted innovations have been maintained or discontinued by these institutions and the study revealed (i) only a limited percentage of secondary teacher training institutions had adopted objective criteria and standardized procedure for admission, (ii) about 85% percent of the institution game weightage to internal assessment, (iii) institutions which had adopted innovations had been able to maintain them, (iv) frequently discontinued innovations were those that involved heavy expenditure for which training had to depend upon other financing agencies, (v) decisions regarding the large number of innovations had
been made by external agencies without involving the actual practitioners and training institution in India had not developed experimental attitude towards new ideas, methods and practices.

Dumba - Safuli (1992) investigated some of the personal and instructional factors that affect utilization of instructional media by lecturers in the Malawi primary teacher colleges. The findings revealed that a number of factors including the way media was introduced into the teachers colleges as part of innovation to improve the quality of primary teacher education, lack of adequate education and training opportunities provided to the lecturers, inadequate support, unavailability of pieces of software, lack of technical services to service and inadequate bureaucratic procedures established in the college for utilization of instructional media.

Hoffman (1992) designed a study to identify activities and characteristics of the elementary principal who is responding in positive ways to the negative effects of social changes as they impact on the elementary school. The social change issues selected by the researcher were poverty, single parent families, mothers in the workforce, child care, child abuse, drug and alcohol abuse and cultural diversity. This study took place in three southeastern Pennsylvania countries. The principals cited their own negative school experiences as a major reason they were responding to elementary students presently struggling with social change.

Fullan (1993) asserted that restructuring is only part of larger construct which focuses on the examination of schools underlying values, assumptions, and benefits; a process he termed re-culturing.

Jenny (1996) conducted a case study to assess the development of the academic computing programme at a small private, liberal arts institution of higher education and suggested that managing academic computing include: a support infrastructure should be proactive, academic computing personnel need strong communication skills, top-down senior level administrative support is necessary, technologies should be current and convenient to users; training should be periodic, current and readily available; small institutions benefit from
partnerships with external entities such as larger institutions or computing consortiums.

Judd (1996) conducted a study to measure positive and negative influences on educational change and found that teachers were shown to perceive that administrative actions have a significantly greater impact on motivating or negating successful change than shown by Superintendents or Principals.

Kytee (1996) measured the components of re-culturing in restructuring schools in national reforms models and results highlighted that sustained change comes only when practicing educators see how policies, structures, processes, roles and programmes can be connected and integrated systematically and culturally.

Goodman (1998) conducted a study on Educational Change on a community wide basis and the general conclusion were (i) people involved in educational change efforts would benefits from schema and theories that can readily inform and guide planning and implementation, (ii) the educational change being implemented should lay a foundation for the next change efforts and the systematic, cultural change desired.

White (1998) made a qualitative analysis of three rural elementary schools in Georgia that experienced changes in grouping practices and concluded that change was not welcomed at any of the 3 schools. However, the process of change in each school was complex, nonlinear story that illustrates how complex schools have become and given an example of the importance of tradition, study and research, staff development, participatory decision making, and leadership skills.

Dellow (1999) investigated how teacher resilience in a context of change and emerging from this study are numerous lessons, stated as propositions about resilient teachers, their perspective on change. One of the more significant propositions is that resilient teachers anchor their careers in autonomy and moral purpose, but in an individualistic way that reflects additional anchors in technical/ functional competence, creativity, and/ or
adventure. Such a findings calls into question the notion that privatism is a barriers to change in education.

Jeizan (1999) examined the role of supervisors as educational leaders in private school in Saudi Arabia. The findings indicate that supervisors are seen as educational leaders by teachers and inspectors. Secondly, supervisors are administrators and leaders who can implement sustained change. Thirdly, supervisors are seen as change agents as they try to influence and change teachers' behaviour through coaching and training.

Kyger (1999) experimented on training the teachers to use pre-correction procedures and concluded that training did result in changes in teacher behaviours related to rehearsing and promoting of desired behaviours, but the changes were not consistent across teachers. Those teachers who demonstrated greater fidelity to the pre-correction components also had greater and more sustained changes in student behaviour and higher rating of acceptability.

Redd-Clery (1999) conducted a study to investigate the factors associated with organizational change and with sustaining change in public sector organization recognized for their change efforts as recipients of the Virginia Award for continuing excellence. The results reveal that such factors include the political dimension, along with coordination of teams, plans, and training. Thirdly, policy changes are effected by the influence of action roles, and the fourth factor associated with organizational change, that was evident in each case, is the implementers' action role.

Raemer (2000) investigated an organizational change in the public support services model at one elementary school to determine if the change was sustained and what were the factors that contributed to its continuation. The conclusions were i) for innovations to continue, teachers must have current data and professional development for acquiring new skills accompanying changed roles and teaching practice. ii) The principal must persistently practice the vision and believes of the innovation. iii) Innovations must not be overly
complex or too broad in scope and iv) Collaborative teaching has potential for teacher assistance.

Review

The empirical evidence exhibits that divided opinion among the practitioners of innovations, involving high costs, lack of community support, inadequate resources, awareness, understanding the goals have a significant relationship with the change sustainability. The studies conducted by Bhagia (1975), Singh (1977), Murphy (1987), Carrasco (1988), Jenny (1996), Judd (1996), substantiated that administrative support, commitment of the staff, nature of the innovations, leadership skills promote the sustainability of change resulted through innovations. Sustainability of changes is ensured by the practitioners’ perceptions and capability of connecting the policies, structures, process, roles and programmes with the broad objectives of the institutions. Technical competence, creativity and adventure were found to be associated to the sustainability of change Dellow (1995). Traditional approaches, complexity of the system stands as the barrier to the change sustainability (White, 1998). Jeizan (1999), Kyger (1999), Raemer (2002) came up with the findings that training of staff resulted into facilitating change process and retaining it at institutional level.

Sustained Change & Professional Development

Alpteking (1998) measured the role of leadership in achieving educational change and continuity through global education and it revealed that the role of leadership in achieving educational change and continuity through global education was significant especially in generating, developing and promoting the ideas, and in developing the connections between people, agencies, organizations and institutions through teaching, writing, editing, chairing, lecturing and taking on various other active duties at such establishments as were influential in educational circles.

Blakeney (1998) conducted a study to capture the development of meaning by teachers as they participate in a school improvement effort and findings from this study illustrate that teachers make sense of their work as it
relates to students, their classes, teaching team and administration, and the school wide context. The meanings that mattered most were close to their primary professional responsibilities in the classroom.

Pennell (1998) tried to create constructivist informed professionals in California and Vermont. He concluded that, they mobilized expert teachers to do much of the work of aligning teachers' personal frames of understanding and the constructivist movement frame. Expert teachers were able to provide experience with instructional strategies and materials that were sensitive to teachers' levels of experience and workplace circumstances. Second, the networks mobilized material and legitimating resources (e.g. scientific findings, assessments, state frameworks, state programmes) that supported constructivist change. However, they were generally unsuccessful at gaining support or changing the practices of teachers strongly committed to traditional instructional approaches. The findings suggested that social movement theory is useful for studying some educational change efforts, but under emphasized the importance of practice in accomplishing change.

Fuentes (1999) conducted a study on educational change and making it happen through staff development. The findings stated that effective implementation and its link to staff development, as well as link between the training in high/ scope and successful implementation of the programme. The key finding in this study is that successful implementation of any programme is dependent on the staff development programme that accompanies it.

Review

The studies in this section gives empirical evidence that teachers' job satisfactions, application of technology, proper utilisation of resources, adequate training of teachers, effective implementation and linking it with staff development programme are interdependent with each other. And sustainability of change is well connected with them (Munol, 1987; Simpson, 1989; Bradely, 1992; Swain, 1996; Lawrence, 1999; Kyger, 1999). The findings of Fuentes (1999) also give evidence that successful implementation of any programme is dependent on the staff development programme that accompanies it.
It may be observed from the review of the studies cited above that various aspects of innovations, professional development of teachers and the sustainable changes resulted through innovations have been examined by the researchers. But, effect of innovations on the professional development of teachers has not attracted many researchers. The present study addresses itself to this.

Emergence of the Problem

In a world undergoing rapid change, professional development of teachers has become vital in carrying out all the activities concerning to their profession. Thus, teachers are not only obliged to renew their skills continuously, but also developing in their pupil the attitude and skills required to create knowledge for themselves throughout their lives. This fact sound more logical in the context where change and innovation have proclaimed increasing recognition and growing concern. In fact, there is no dearth of innovations in the field of education in general and professional development of teachers in particular. In post independence era, development of education in India has been rapid. But the output does not commensurate with the knowledge input. Though many innovations have been tried out, only a few have sustainable impacts on various aspects of innovations. Some innovations got diluted and distorted and some even could not reach the institution. How these innovations got diluted or distorted? Why did they fail to reach the educational institutions? What are the resisting factors for these innovations and how the innovations are sustained and disseminated are some of the pertinent issues which need to be addressed.

The researches conducted in India so far on innovation are largely concentrated on institutional lag in our teacher education. A few researches have been conducted on the impact of innovations on the professional development of teachers particularly at elementary level. This is not exaggeration that there are lots of researches on innovations and their implementation, but very little efforts have been made to examine the sustainable impact on the innovations. The problem is more serious while
discussing about the impact of innovations on improving the professional efficiency of the teachers. Whether the impacts of the innovations have sustained or disappeared? This is the contention for which the present research has been designed.

Statement of the Problem

'Sustained Changes through Innovations and their Impact on the Professional Development of Working Elementary School Teachers.'

Delimitation of the Study

The study was delimited firstly to elementary schools of Chandigarh (U.T.) and secondly to the professional development of teachers at elementary level. The professional development has been measured as rise in professional competence.

Objectives of the Study

The study was designed to attain the following objectives:

1. To identify a group of Most Innovative and another of Least Innovative Schools.
2. To study the status of Innovation awareness among the teachers of the Most and Least Innovative Schools.
3. To study the correspondence between innovative practices and innovation awareness.
4. To study the sustenance of changes initiated by the innovative practices in Most and Least Innovative Schools.
5. To study the correspondence between the change sustenance and innovative practices.
6. To study the effect of innovative practices on different components of professional development.
7. To study the impact of innovative practices on the professional development of the teachers working in the Most and Least Innovative Schools.
Hypotheses

The study has been designed to test the following research hypothesis:

Ho-1 The Innovation awareness in the Most Innovative schools do not differ from the same in the Least Innovative schools.

Ho-2 The changes initiated by innovative practices are sustained more in Most Innovative schools than their counterparts.

Ho-3 The professional competence of teachers in most innovative schools excels the professional competence of teachers in Least Innovative schools.