

## CHAPTER - VI

### ANALYSIS OF CASE STUDIES.

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#### 1. INTRODUCTION:

Case Studies of ten selected innovations have been reported in the previous chapter. The different aspects of change were presented innovation-wise. In this chapter, it is proposed to make an aspect-wise study of the innovations, that is, taking one aspect of change at a time, analyse all the ten innovations together and make an in-depth analysis of the particular aspect. The size of sample for each innovation ranges from 4 to 20. While previous doctoral studies have been restrictive and selective since the study of aspects of changes is based on an investigation of either one and only one innovation or one institution, this present investigation is unique in that several aspects of several innovations practised in several schools are studied in great depth. This enables generalisations to be made with greater authenticity.

## 2. ASPECTS OF CHANGE SELECTED FOR STUDY:

The objectives of the present study, as already stated are: (1) to find out the factors that promote introduction of innovations; (2) to increase our knowledge of the positive factors facilitating the institutionalisation of innovations (3) to examine the process of dissemination of innovations (4) to ascertain the factors that promote the continuance of innovations and the factors that lead<sup>to</sup> the discontinuance of innovations. (5) to identify factors of resistance and change that may serve to block the implementation of innovation and (6) to describe the role of change agent and opinion leaders in the change process.

Keeping the above objectives in mind, the following aspects of change were taken up for study: (1) the Ideational Dimension: knowledge, persuasion, decision, resistance and dissemination aspects of innovations (2) the Personnel Dimension: the adopter continuum, its distribution, characteristics and mobility and the change agents and opinion leaders, their identity, characteristics and role (3) The Time Dimension: the points of time of the various stages of innovation and the time lags between other points of time. (4) Models of change and (5) Effect of change on the system.

## 3. VERIFICATION OF HYPOTHESES:

A set of hypotheses had been spelt out in chapter IV of the present study. Though Case Study technique does not give adequate

scope for the verification of the hypotheses, an attempt has been made to verify the same to the extent possible.

#### 4. THE IDEATIONAL DIMENSION OF CHANGE:

##### 4.1 Knowledge Function:

The knowledge function commences when the individual is exposed to the existence of the innovation and gain some understanding of how it functions. There are three levels of Knowledge (1) Awareness that an innovation exists; (2) "How-to" knowledge, consisting of information necessary to use an innovation properly and (3) Principles - Knowledge, dealing with the functioning principles or the conceptual or ideological bases underlying an innovation (Rogers and Shoemaker, 1971).

##### Awareness of the existence of the innovation:

It is a moot point to find out how the practitioners became aware of the existence of an innovation. What, according to them, was the source of change? The second part of the innovation profile (IP) called for particulars as to (1) the sources where the respondents got the idea from and (2) any earlier sources from whom the idea could have flowed to the source from whom they got the idea. Table 6.1 presents particulars of the source of innovations, the number of innovations which the respondents came to know from the particular sources and the number of respondents who identified a particular source as the source from which they got the idea.

**TABLE 6.1 : SOURCES OF INNOVATION. THE NUMBER OF INNOVATIONS ORIGINATED AND THE NUMBER OF RESPONDENTS AWARE OF THE SOURCE:**

| S.No. | Source of Innovation        | No. of Innovations Originated | No. of persons aware of |
|-------|-----------------------------|-------------------------------|-------------------------|
| 1.    | Headmasters                 | 8                             | 591                     |
| 2.    | NCERT/SCERT                 | 5                             | 178                     |
| 3.    | Department of Education     | 4                             | 800                     |
| 4.    | Professional Organisations  | 2                             | 158                     |
| 5.    | British Council             | 2                             | 24                      |
| 6.    | Management of schools       | 1                             | 100                     |
| 7.    | Mass Media                  | 1                             | 46                      |
| 8.    | Teachers of the same school | 1                             | 18                      |
| 9.    | Other Schools               | 1                             | 8                       |
| 10.   | Teacher Training Institutes | -                             | -                       |
| 11.   | Educational Journals        | -                             | -                       |
|       |                             | 25                            | 1888                    |

**NOTE:** The totals exceed the number of innovations studied and the number of respondents because the respondents had identified more than one source for the same innovation.

From Table 6.1, it is found that headmasters of schools were the major sources of innovations, for they had been identified as a source from whom the respondents got the idea with respect to eight of ten innovations. This shows that teachers come to know of an innovation from the source which is the most proximate to them. This finding reiterates the result of a study by Miller (1967) that the headmaster being close to the client system and having the responsibility of initiating change is the basic source of innovation for most teachers. The only two innovations for which the headmaster was not identified as the source were the College Complex and the Compulsory Physical Education Programme. But the largest number of respondents had identified the Department of Education as the source of innovation. It is significant that all the innovations whose source were reported as the Department of Education, namely, the Higher Secondary Education, Modern Mathematics, College Complex and Compulsory Physical Education Programme were initiated by the Department itself and the Department of Education had acted as Change agent with regard to these innovations. All the respondents identified the department as a source for the four innovations. N.C.E.R.T./S.C.E.R.T. had been reported as the source for five innovations. Though N.C.E.R.T./S.C.E.R.T. had acted as change agent for three of the five innovations, the sources other than N.C.E.R.T./S.C.E.R.T. were identified by a large number of respondents. It is significant that with regard to all these five innovations, headmasters were identified as a source by a larger section of the respondents.

Further, neither the colleges of education nor educational journals had been reported to be sources for any innovation by any respondent. During interviews and visits to schools, it was gathered that no educational journal was subscribed for except by eight schools. Though there were extension departments attached to four colleges of education, only one of them was reported to be active and known to the respondents. It was found that the extension departments had not played a pioneering role in making schools aware of innovations. It was gathered that extension services were offered after an innovation had been introduced, through conduct of refresher courses, especially with regard to widely introduced innovation like Modern Mathematics. This sort of 'isolation of teacher education institutions' mentioned by the Education Commissioner (1966) and its impact on innovations is a fit topic for a separate study. It is also significant that with regard to all the ten innovations, the sponsors of the innovation had been identified by the respondent though with regard to three innovations all the respondents could not state the source and 250 respondents could not identify the agency initiating the change. They had identified a proximate agency, namely the Headmaster, as the source. All these three innovations had been sponsored by N.C.E.R.T./S.C.E.R.T. This finding is supported by that of P.S.Balasubramanian (1980) that teachers are aware of a proximate source in a greater measure than a distant source. Both the bodies disseminate innovations mainly through conducting courses which cover a very negligible section of the population and believe in the nuclear chain reaction

model of dissemination to other teachers and schools. This dissemination had seldom taken place. While N.C.E.R.T.'s journals were subscribed for by only two schools, the S.C.E.R.T. had no periodical of its own. Only one innovation, namely Work Experience had been identified to have teachers of the school as the source of the idea. It is significant that teachers other than headmasters as initiators of change were difficult to be known and identified. This is in contrast to the finding by Orlosky and Smith (1972) who studied 63 innovations implemented during a period of 75 years in U.S.A. and found 49 innovations to have originated internally to the system and only 14 innovations had their origin external to the system.

It will be interesting to find how many of the practitioners were aware of the original source of the idea and other sources wherefrom the idea would have flowed to the source from whom they became aware of the innovation. Table 6.2 presents the number of earlier sources known to the practitioners and Table 6.3 gives details of the awareness of the primary source of the innovation.

**TABLE 6.2 : NUMBER OF EARLIER SOURCES OF INNOVATION  
IDENTIFIED BY THE RESPONDENTS**

| No. of earlier sources<br>identified | No. of Respondents |
|--------------------------------------|--------------------|
| 0                                    | 491                |
| 1                                    | 471                |
| 2                                    | 293                |
| 3.                                   | 145                |
| 4 and<br>more                        | N11                |
| Total                                | 1400               |

**TABLE 6.3 : AWARENESS OF THE PRIMARY SOURCE OF AN INNOVATION.**

| Innovation                         | Number of respondents identifying the<br>Primary Source as the |              |               |              | No. of<br>respondents<br>unable to<br>identify<br>the Primary<br>Source |
|------------------------------------|----------------------------------------------------------------|--------------|---------------|--------------|-------------------------------------------------------------------------|
|                                    | I<br>Source                                                    | II<br>Source | III<br>Source | IV<br>Source |                                                                         |
| Higher Secondary<br>Education      | N11                                                            | 36           | 62            | 64           | 34                                                                      |
| Modern Mathematics                 | N11                                                            | 12           | 26            | 15           | 147                                                                     |
| Evaluation                         | N11                                                            | 22           | 47            | 13           | 18                                                                      |
| Centre for Continuing<br>Education | N11                                                            | 8            | 9             | -            | 33                                                                      |
| College Complex                    | N11                                                            | 72           | 79            | 11           | 38                                                                      |
| Physical Education<br>Evaluation   | 36                                                             | 115          | 16            | 29           | 4                                                                       |
| Internal Assessment                | 72                                                             | 50           | 18            | N11          | 34                                                                      |
| Work Experience                    | 36                                                             | 14           | N11           | N11          | N11                                                                     |
| Library Centred Teaching           | N11                                                            | 100          | N11           | N11          | N11                                                                     |
| Staff Incentive                    | N11                                                            | 10           | 30            | N11          | 60                                                                      |
| Total                              | 144                                                            | 465          | 287           | 132          | 372                                                                     |

From Table 6.2, it is found that the respondents were able to identify not more than four sources, including the most immediate source from whom they first come to be aware of the innovation. 491 out of 1400 respondents were not able to state any other earlier source from whom their source would have got the idea i.e., one out of every three respondents was blissfully ignorant of the flow of idea from the primary source. Of these, 38 identified the primary source itself as their source. The other 453 respondents could only state their secondary source and they were not aware of the primary source. During interview of the respondents, it was gathered that they had simply learnt about the idea from their proximate source and accepted it. Their source had not taken pains to **inform** them about the philosophical or the conceptual or the technical basis of the innovation and about the historical evolution of the innovation. Even in the case of 959 respondents who had mentioned one or more earlier sources, the earlier sources mentioned by nearly one fifth of them had no link with the innovation. When asked how and why they considered them as earlier sources, they just said that it was their pure guess and they were not quite aware of the pipeline flow of the innovation. From Table 6.3, it is found that only 144 i.e., 10% of the respondents had come to know about the innovation direct from the primary source and 372 persons were not able to identify the primary source at all. With regard to Modern Mathematics, nearly 74% of the respondents were not aware of the primary source though the innovation was introduced in all the schools and the Association of Mathematics Teachers of India had taken great initiative in propagating the idea. The concept of

Modern Mathematics was totally new to almost all of the teachers. Though the Association of Mathematics Teachers of India exercised considerable influence with the decision-making authorities, it had not developed any significant grass roots among the Mathematics Teachers in the schools. Its membership was less than 1000 and its journal was subscribed for by not more than 200 schools. Educating the practitioners about the development of the innovation was absent with regard to a number of innovations. Only where the primary source and the change agent were one and the same or closely connected or proximate, there was evidence of any awareness of the primary source. When the primary source was remote as in the case of Modern Mathematics, Centre for Continuing Education and Staff Incentive Schemes, the practitioners tended to be ignorant of the primary source.

The above analysis leads to the following generalisations:

1. The Headmasters, being the most proximate agency, is the prime source of change for most teachers.
2. With regard to the departmentally sponsored innovations, the department of education is known to the teachers as a source of the innovation.
3. The research bodies like N.C.E.R.T. and S.C.E.R.T. being far removed from the scene of change are not easily identified as the source of change by most teachers.
4. A significant number of teachers - about one third - are aware of only the source from which they became aware of the idea and are not aware of any earlier source from which the idea had flowed from.

5. 27% of the teachers are not aware of the primary source of the innovation.
6. Where the primary source is located abroad or in non-educational sector, teachers ranging from 50% to 75% are not able to identify the primary source.
7. A small number of teachers, namely 10% alone get the idea direct from the primary source of an innovation.
8. Teachers are able to identify the primary source if the same also happens to be the change agent.

#### 4.2 PERSUASION FUNCTION:

Persuasion function is that stage in the innovation-decision process when "the individual forms a favourable or unfavourable attitude toward the innovation. Whereas the mental activity at the knowledge function was mainly cognitive, the main type of thinking at the persuasion function is affective" (Rogers and Shoemaker, 1971) Question 13 through 20 of the innovation profile (IP) collected from the practitioners of innovations related to the persuasion stage. Table 6.4 shows the factors of interest, the number of innovations for which they had been reported to have aroused the interest of respondents and the number of respondents who were influenced by these factors.

**TABLE 6.4 : DISTRIBUTION OF INNOVATIONS AND RESPONDENTS  
WITH REGARD TO FACTORS OF INTEREST.**

| S.No. | Factors of Interest | No. of Innovations | No. of Respondents |
|-------|---------------------|--------------------|--------------------|
| 1.    | Authority sponsored | 6                  | 810                |
| 2.    | Probable solution   | 8                  | 650                |
| 3.    | Long term benefits  | 5                  | 199                |
| 4.    | Image Promotion     | 5                  | 152                |
| 5.    | Popular idea        | 4                  | 120                |
| 6.    | Novel ideas         | 5                  | 109                |
| 7.    | Prestige value      | 1                  | 89                 |
| 8.    | Uniqueness          | 2                  | 79                 |
| 9.    | Necessity           | 1                  | 48                 |
| 10.   | Union-sponsored     | 1                  | 46                 |
| 11.   | Imitation           | 1                  | 6                  |
| 12.   | Other factors       | 2                  | 19                 |

**NOTE:** The total exceed the number of innovations studied and the number of respondents contacted, as more than one factor had been identified for each innovation by a respondent.

The main factor motivating interest among the practitioners of the innovations is found to be that the innovations were sponsored by those in authority, as was found out from their positive response to the alternative "It has been given from above; I had no options". It is noteworthy that all the six innovations for which the factor of authority was identified were all promoted by the department of education. The next important factor identified was that the respondents opined that the innovation was a probable solution to

their problems. That the innovation was expected to pay dividends in the longer run interested just 199 respondents i.e., about 14% of the respondents. About 10% of the respondents were interested in an innovation because they thought it would add a new dimension to the functioning of the school. For two of the department-sponsored innovations, namely Modern Mathematics and Comprehensive Internal Assessment Scheme, none thought they were probable solutions to their problems. Further, with regard to College Complex Scheme, another department-sponsored innovation, while 112 were interested because it was authority sponsored, a large number of respondents, namely 137, were motivated because they considered it as a probable solution to their problem. Similarly for Higher Secondary Education ~~which~~ was also promoted by the department, almost equal number of respondents identified the first two factors, that is, authority-sponsored and probable solution as the factors of interest. The following factors had been reported only with regard to one innovation, that too by a small number of people (1) 'It has prestige value' (2) 'No other go; it is sheer necessity' (3) 'It is union-sponsored' (4) 'Others have done it. Let us imitate' While the fact that an innovation being promoted by a teachers' union was mentioned by 46% of the practitioners of the innovation, 89% of the respondents attributed prestige value as the factor that motivated them with regard to the innovation 'Staff Incentive Scheme'. It is significant that for these two innovations, the percentage of respondents considering the idea as a probable solution were 76% and 72% respectively. It may therefore be concluded that the predominant factor that create

interest in an innovation, whether sponsored by a superordinate agency or not, is its being a probable solution to any problem facing the clientele, that is, the utility value of the innovation.

Once the target group has taken an interest in an innovation, how is the interest sustained and developed further? Do they collect further information about the innovation? If so from what source? If not, why don't they? Tables 6.5, 6.6 and 6.7 present the data collected with regard to these pertinent queries.

**TABLE 6.5 : NUMBER OF RESPONDENTS COLLECTING FURTHER DATA ABOUT THE INNOVATION.**

| S.No. | Name of Innovation                       | No. of respondents collecting further information | *Percentage of respondents collecting further information |
|-------|------------------------------------------|---------------------------------------------------|-----------------------------------------------------------|
| 1.    | Higher Secondary Education               | -                                                 | -                                                         |
| 2.    | Modern Mathematics                       | 55                                                | 27.5                                                      |
| 3.    | Objective based Evaluation               | 38                                                | 38                                                        |
| 4.    | Centre for Continuing Education          | -                                                 | -                                                         |
| 5.    | College Complex                          | 79                                                | 39.5                                                      |
| 6.    | Compulsory Physical Education Programme  | 113                                               | 56.5                                                      |
| 7.    | Comprehensive Internal Assessment Scheme | 140                                               | 70                                                        |
| 8.    | Work Experience                          | -                                                 | -                                                         |
| 9.    | Library Centred Teaching                 | 72                                                | 72                                                        |
| 10.   | Staff Incentive Scheme                   | -                                                 | -                                                         |
| Total |                                          | 497                                               | 35.5                                                      |

\* The Percentage has been worked out to the number of respondents who answered the innovation profile (IP) with regard to the particular innovation.

**TABLE 6.6 : SOURCES FROM WHICH FURTHER COLLECTION OF INFORMATION ABOUT THE INNOVATION WAS MADE.**

| S.No. | Name of the source   | No. of respondents collecting information from the source |
|-------|----------------------|-----------------------------------------------------------|
| 1.    | Immediate Source     | 361                                                       |
| 2.    | Intermediate sources | 136                                                       |
| 3.    | Primary source       | -                                                         |
| Total |                      | 497                                                       |

**TABLE 6.7 : FACTORS FOR NOT COLLECTING FURTHER INFORMATION ABOUT THE INNOVATION.**

| S.No. | Factor                                    | No. of Respondents | No. of Innovations |
|-------|-------------------------------------------|--------------------|--------------------|
| 1.    | It would clear up as and when implemented | 407                | 5                  |
| 2.    | The idea was clear enough                 | 253                | 5                  |
| 3.    | It is not my job                          | 177                | 3                  |
| 4.    | Wherefrom to collect is not known         | 66                 | 2                  |
|       |                                           | 903                |                    |

From Table 6.5, it is found that, with regard to four innovations, namely, Higher Secondary Education, Centre for Continuing Education, Work Experience and Staff Incentive Scheme, no efforts were made to collect further information about the innovation. The reasons stated for not collecting further information are given in Table 6.8

**TABLE 6.8 : FACTORS FOR NOT COLLECTING INFORMATION WITH REGARD TO FOUR SPECIFIED INNOVATIONS.**

| Reason                                 | Number of Respondents not collecting information |                                         |                         |                          |                |
|----------------------------------------|--------------------------------------------------|-----------------------------------------|-------------------------|--------------------------|----------------|
|                                        | Higher Secondary Education<br>(200)              | Centre for Continuing Education<br>(50) | Work Experience<br>(50) | Staff in Scheme<br>(100) | Total<br>(400) |
| 1. It would clear up in course of time | 200                                              | -                                       | -                       | 28                       | 228            |
| 2. The idea was clear                  | -                                                | 50                                      | 50                      | -                        | 100            |
| 3. It's not my job                     | -                                                | -                                       | -                       | 72                       | 72             |

It is seen with regard to two innovations, the practitioners were quite sure about their understanding of the innovation and hence they did not find it necessary to gather further information. With regard to the government sponsored innovation, Higher Secondary Education, practitioners felt everything would clear up in course of time. During interview, they confirmed that they had so many doubts and misgivings, but they were cocksure that the change agents being committed to the successful implementation of the innovation would take sufficient and effective steps to clear the doubts. 72% of the respondents to the management-sponsored innovation thought it was not their job to collect further information and on being questioned during the interview, most of them explained that since they could not influence the sponsor of the innovation with regard to the innovation they did not feel it worthwhile to go in for further information.

From Table 6.7, it is found that out of the 903 respondents who did not collect further details about the innovation, 253 were clear about the idea. Hence only 650 persons had doubts, but still did not feel it necessary to collect further details. While 66 respondents 49 relating to Modern Mathematics and 17 relating to Internal Assessment Scheme - did not know the source from which they could collect details, 407 persons, that is, 63% of those with doubts thought that the idea would clear up as and when the innovation was implemented. Only 27% felt it was not their duty.

It is significant that no respondent turned to the primary source for clearing the doubts and collecting further details about the innovation. 72.6% contacted the immediate source from whom they learnt about the innovation while the rest collected from earlier sources. This shows the immediate source, in view of its proximity to the client, is the agency which furnishes information. It is also noteworthy that the immediate source was often the change agent.

From Table 6.5, it is found that 497 respondents tried to collect further information about the innovations. What their position was when they gathered additional information is a moot point to consider. Table 6.9 presents their reactions after they got to know more about the innovations.

**TABLE 6.9 : REACTIONS OF RESPONDENTS ON GETTING ADDITIONAL  
INFORMATION ABOUT THE INNOVATIONS.**

| S.No. | Response                              | No. of Respondents |
|-------|---------------------------------------|--------------------|
| 1.    | The objectives were worthwhile        | 258                |
| 2.    | Got a clear understanding of the idea | 249                |
| 3.    | There was a need for this innovation  | 189                |
| 4.    | The idea would work here              | 71                 |
| 5.    | It is acceptable to all in the group  | 54                 |
| 6.    | No response                           | 21                 |

**NOTE:** The same respondent may have given more than one response.

It is significant that out of 38 persons who sought further information about objective based evaluation, 21 could not respond positively to any of the first five statements. On enquiry during the interview, they gave the reason that they stood as they were before and that no change in their knowledge about or attitude towards the innovation took place consequent to their obtaining further information. This is evidence of the complexity of the innovation. While a majority of respondents were convinced about the worthwhileness of the objectives of the innovation 50% of the respondents became clear about the content of the innovation. 38% of the respondents were convinced about the content of the innovation. 38% of the respondents were convinced about the need for the innovation.

The mode of transmission of the message to the colleagues was mainly announcement or exposition of the idea at staff meetings. All but one innovation (Centre for Continuing Education) was put forth in staff meetings. Another medium adopted commonly was circulars especially when the technical details were numerous and instructions had to be issued to the faculty for causing action. Informing members informally had been adopted with regard to one innovation only i.e. Internal Assessment Scheme. It is significant that ideas had not been reported to be conveyed through the opinion leaders even though opinion leaders were reported to exist in every school. This point of non-utilisation of opinion leaders will be discussed at greater length in a subsequent paragraph. External agencies were involved to a small extent in spreading the idea with regard to four innovations only. NCERT/SCERT was associated with spreading Modern Mathematics, while the help of other school was sought for conveying information about objective based Evaluation and Work experience. The Professional organisations - namely the Association of Mathematics Teachers of India, South Indian Teachers' Union and Arts and Craft teachers - were actively involved with regard to Modern Mathematics, Library Centred Teaching and Work Experience. Teacher Training Institutions had not been contacted by anybody with regard to any innovation. The involvement of outside agencies in the internal dissemination is very little.

: 6.20 :

On being informed about the innovation, almost all teachers welcomed two innovations - Work Experience and Library Centred Teaching while about 50% of the teachers approved five other innovations. Skeptism was reported with regard to Modern Mathematics, Objective based Evaluation, Compulsory Physical Education Programme and Internal Assessment Scheme. It is significant that three of the four innovations had a high score on 'Complexity' factor. Silence on the part of a majority was reported with regard to three innovations - Higher Secondary Education, Modern Mathematics and objective based Evaluation.

Staff meeting was used to shape the idea for adoption in the schools with regard to seven innovations. Though staff councils were constituted in each and every institution according to the requirements of rules, no effective use of staff council was made to shape the idea. During interview, it was mentioned that Staff Council met only for the formulation of criteria for annual promotion and no other function was given to it. On intensive questioning, the headmasters agreed that they could have made use of Staff Council for shaping the idea for adoption. The Headmasters were more at home at Staff meetings where there were no discussions generally rather than staff councils where teachers participated in the discussions. However, in a few schools, staff councils discussed and formulated plans of action for implementation of an idea with regard to four innovations - College Complex, Physical Education Programme, Internal Assessment Scheme and Work Experience. From the above analysis, the following

generalisations may be made about the persuasion function:

1. The key factor that motivate practitioners to take interest in an innovation whether promoted by an authority or other agency is that it is a probable solution to a problem they are facing, that is the utility value of the innovation.
2. A large majority of practitioners are reluctant to collect further information about the innovation.
3. Those who do collect further details about the innovation contact mainly the source from which they have known the idea and the primary source is never contacted <sup>by</sup> anybody.
4. The main reason for the reluctance to collect further information is a kind of lethargy borne out of optimism that everything will clear up in course of time.
5. On getting further details of the innovation, a majority of those who seek information get a clear understanding of the innovation and are convinced about the objectives of the innovation and the need for the innovation.
6. The staff meeting is the common mode used in schools for shaping the idea.
7. Circulars are used to shape the idea which is complex.
8. The teacher training institutions are not involved in the persuasion function.
9. Skepticism or silence is the main reaction to authority-sponsored innovations.
10. Recourse to staff council is made generally in case of innovations requiring greater personal involvement of teachers.

#### 4.3 DECISION FUNCTION:

"At the decision function in the innovation-decision process, the individual engages in activities which lead to a choice to adopt or reject the innovation." (Rogerts and Shoemaker, 1971). While in the knowledge function, the individual decides which innovation messages to attend to and which ones to disregard, in the persuasion stage he decides to seek certain message and to ignore others. But in the decision function, the type of choice is different from those at the earlier two stages in that it is a decision between two alternatives - to adopt or to reject a new idea.

Two innovations, namely, Higher Secondary Education and Modern Mathematics had been sponsored by the Government and introduced compulsorily in all schools with neither an opportunity to the clientele population to participate in the decision-making nor any option for them to decide contra. As such the decision-making agency with regard to these two innovations was the government and hence an attempt was made to probe into how the decision to adopt the innovations was made at the governmental level. The debates in the legislature, public pronouncements of the Ministers for Education and official documents were depended upon in making the study into the decision-making process. With regard to higher secondary education, the innovation was known since the publication of the Report of the Education Commission, 1964-66. The scheme was discussed at several meetings of the State Education Ministers and the Central Advisory Board

of Education and resolutions were passed to put into effect the ten plus two plus three scheme. The Education Minister of the Government of Tamilnadu was a party to the resolution and desired to implement the innovation. The publication of the Report of the Shukla Committee (1975) only hastened the decision. Consultations were done with educationists, teachers' organisations and other interested parties when they were invited to tender evidence before Rangabashyam Commission. Decision to implement was taken at the Ministerial level on the basis of the recommendations of the Rangabashyam Commission. With regard to modern mathematics, it was the syllabus committee specially formed by the government with a special direction to update the curricula in conformity with the curricular reforms taking place in India as well in the United States, Great Britain and other countries that took the decision to incorporate modern mathematics. The chairman and most members of the syllabus committee were committed to the concept of modern mathematics. It is therefore seen that commitment and conviction were the dominant factors in the decision-making. It is also significant that both these innovations were decided to be implemented by the same Minister for Education. In the decision-making, he was guided by expert advice. Necessary administrative and technical support was provided for the implementation of the innovations and necessary infrastructural facilities in terms of training, building, etc., were also provided. This is in conformity with the finding of M.B.Buch and Piloo Buch (1971) and Balasubramanian (1979).

Physical Education Evaluation Programme was another innovation which was introduced simultaneously in all the schools throughout the State. The decision ~~to~~ adopt the innovation was taken by a Director of School Education who was committed to the innovation and was also convinced by the need and utility of the innovation. Necessary administrative and technical support was also tendered to the scheme. Comprehensive<sup>ve</sup> Internal Assessment Scheme was also introduced in most schools, though in a phased programme, by another Director of School Education<sup>who</sup> showed commitment and conviction. Both innovations failed when there was a change in the incumbent of the office of the Director of School Education. The succeeding Directors of School Education had not the same commitment and conviction as the Directors who introduced the innovation.

The decision to introduce the innovation 'Objective based evaluation' was mostly taken by headmasters of schools. The motivation was their being introduced to a new concept which they thought they should try in their schools. Similarly, though the college complex scheme was a departmentally sponsored one, it was largely the headmaster who took the ~~decision~~ to implement the innovation. The innovations 'Work Experience' and 'Library Centred Teaching' were decided upon for introduction by the headmasters. In the very nature of the innovation, only the managements of schools decided upon the introduction of the Staff Incentive Schemes. Most decisions had been taken on the spur of

the moment and initial enthusiasm and sustained interest and commitment were not reported. These <sup>are in conformity with the</sup> findings of S. Purushothaman (1979) and Sathyavathi (1980).

Though no trial of the innovation on a small scale was reported in the case of any innovation except objective based evaluation and library centred teaching - where too it was done only in a very few institutions, a kind of mental trial could be discerned when the pros and cons of the innovation, the modus operandi of the introduction and sustenance of the innovation and the administrative, technical and financial support needed for the implementation of the innovation were studied.

All the innovations had been put into operation in their original forms in a large majority of schools and modification of the innovation was reported in a few isolated cases with regard to four innovations. It was the headmaster who took the decision to modify the innovation in case of two innovations and the Staff Council made the modifications in the other two cases. The changes were made (1) to make the innovation acceptable to the teachers by removing certain elements which would increase the load of work on teachers and (2) to put into the innovation some of the special characteristics and features of the institution so that it was in conformity with their norms and traditions.

Table 6.10 gives the different characteristics of the innovations which motivated the client population to adopt the innovation.

TABLE 6.10 : THE MOTIVATING CHARACTERISTICS OF INNOVATIONS

| S.No. | Characteristic     | Number of respondents influenced by it | Percentage to the total number of respondents |
|-------|--------------------|----------------------------------------|-----------------------------------------------|
| 1.    | Divisibility       | 1089                                   | 77.7                                          |
| 2.    | Relative Advantage | 1018                                   | 72.7                                          |
| 3.    | Simplicity         | 1023                                   | 73.6                                          |
| 4.    | Communicability    | 948                                    | 67.7                                          |
| 5.    | Observability      | 932                                    | 66.6                                          |
| 6.    | Competability      | 865                                    | 61.8                                          |

While a detailed analysis of the characteristics of the innovations as evaluated by respondents will be made in a subsequent paragraph, it is sufficient at this juncture to note that the respondents were influenced more by the positive characteristics of the innovation in their decision to adopt the innovation. Due to the limitations of the study, only innovations which had been adopted were taken up for study. A separate study may be made to study in depth innovations which had been rejected at the decision stage and find out the causative factors for the rejection.

From the analysis of the decision function, the following generalisations are made.

1. Commitment and conviction play a dominant role in taking a favourable decision with regard to the adoption of an innovation.
2. The Minister for Education takes the decision to adopt with regard to government-sponsored innovations and he is guided by expert advice.
3. The Director of School Education takes the decision to adopt with regard to departmentally sponsored innovations.
4. For the government sponsored innovations, necessary administrative, technical and financial support is provided to adopt the innovation.
5. For the department sponsored innovations, such support is rather lacking or not continuous.
6. It is mostly the headmasters who take the decision to adopt an innovation, other than those sponsored by the government.
7. Though care and thought has gone into the structure of an innovation, the decision to adopt is made more on the spur of the moment and initial enthusiasm.
8. In the absence of a trial of an innovation on a limited scale before the decision to adopt is taken, a sort of mental trial takes place in the minds of decision-makers.
9. Most innovations are put into operation in their original form and no significant attempt is made to modify the

innovation to suit the genius of the institution and reduce the practical difficulties in the operation of the innovation.

10. The positive characteristics of an innovation influence the practitioners of the innovation to a larger degree in their decision-making than the dysfunctional characteristics.

#### 4.4 RESISTANCE TO THE INNOVATION:

One of the most important aspects of an innovation is the resistance factor. It will be greatly helpful if it is known why resistance develops, what causes resistance and how resistance may be got over. This knowledge will enable smooth and successful selection of innovations on the first <sup>hand</sup> and their implementation thereafter. Question Nos. 44 through 58 in the Innovation profile (IP) issued to the sample population dealt with these factors.

#### Innovations that had no resistance:

It was reported that only three innovations - Compulsory Physical Education Programme, Work Experience and Library Centred Teaching - did not meet with resistance. Of these three, one had been discontinued in all the schools and another discontinued in most schools while the third one, that is, Work Experience had been institutionalised. It is significant that in all these three innovations, there was active participation of the client population in the operationalisation of the innovation. Though 'Compulsory Physical Education Programme' was departmentally sponsored, the active support of the practitioners was sought and obtained.

The other two innovations involved the teachers in a large measure in the selection of the innovations and their implementation. Participation by the client system in the implementation of an innovation may therefore be seen as a positive deterrent against any resistance being developed to the innovation.

#### Agencies of Resistance:

Resistance of one sort or other was reported with regard to seven other innovations. While, with regard to Modern Mathematics, resistance was reported from persons internal as well as external to the system, resistance was totally from within the system with regard to four other innovations, namely Objective based Evaluation, Centre for Continuing Education, Internal Assessment Scheme and Staff Incentive Schemes. Resistance from persons external to the system was reported for the innovation Higher Secondary Education and College Complex. Teachers of school were the sole resisters for four innovations, while the headmasters joined with teachers in exhibiting their resistance to one innovation, that is, the Centre for Continuing Education. This conforms to the finding<sup>a</sup> D.B.Desai (1972) that the teachers were the major resisters to change. The external agencies of resistance were the college teachers with regard to Higher Secondary Education and College Complex Scheme, while parents showed their resistance to Modern Mathematics. Table 6.11 presents particulars of agencies of resistance to innovation.

TABLE 6.11 : AGENCIES OF RESISTANCE TO INNOVATION.

| S.No. | Agency of Resistance           | No. of Innovations resisted |
|-------|--------------------------------|-----------------------------|
| 1.    | School Teachers                | 3                           |
| 2.    | School Teachers and Headmaster | 1                           |
| 3.    | School Teachers and Parents    | 1                           |
| 4.    | College Teachers               | 2                           |

It is significant that external resistance to innovations even of a far-reaching consequence as Higher Secondary Education had not been reported. The parents who showed resistance to Modern Mathematics resisted more due to ignorance of the innovation than any other factor. Even though college teachers resisting the innovations had been categorised under external agencies, they were as much internal to the education system as a whole and their resistance was against any destabilising factor in the system.

Manifestation of the Resistance:

How was the resistance shown and to what aspects of the innovation and in what capacity are matters of significance. For seven innovations, resistance was shown indirectly while open resistance was reported with regard to three innovations, there being open as well as indirect resistance to three innovations. Open resistance was shown to the innovations, Objective based evaluation, College Complex Scheme and Internal

Assessment Scheme and all these three innovations also experienced indirect resistance. It is significant that all the three innovations had been discontinued in most schools, one of the innovation being given up by all schools, another by all but two schools and the third one discontinued in 16 out of 20 schools. Further, it had been reported that only in the case of Internal Assessment Scheme, most teachers had offered their resistance while some teachers resisted two innovations and very few teachers were reported to have resisted four other innovations. It is therefore seen that though resistance had been reported in the case of seven innovations, only with regard to three innovations, a considerable size of the client system had shown resistance. While resistance to Modern Mathematics and the Centre for Continuing Education was exhibited in their individual capacities, five other innovations saw resistance from the client system and other agencies in their individual capacities and as a group as well. Table 6.12 summarises the agencies of resistance their mode of resistance and their distribution.

**TABLE 6.12 : AGENCIES OF RESISTANCE AND MODE OF RESISTANCE.**

| S.No. | Innovation                      | Resistance | Capacity in which resisted | Number of Resisters | Mode of Resistance |
|-------|---------------------------------|------------|----------------------------|---------------------|--------------------|
| 1.    | Higher Secondary Education      | Ext.       | Ind.                       | Some                | Coll.              |
| 2.    | Modern Mathematics              | Ext./Int.  | Ind.                       | A Few               | Indl.              |
| 3.    | Objective based Evaluation      | Int.       | Open/Ind.                  | A Few               | Indl./Col          |
| 4.    | Centre for Continuing Education | Int.       | Ind.                       | A Few               | Indl.              |
| 5.    | College Complex                 | Ext.       | Open/Ind.                  | Some                | Indl./Col          |
| 6.    | Internal Assessment Scheme      | Int.       | Open/Ind.                  | Most                | Indl./Col          |
| 7.    | Staff Incentive Scheme          | Int.       | Indirect                   | A Few               | Indl./Col          |

Ext. = External

Ind: Indirect

Indl.: Individually

Int. = Internal

Open: Open

Coll: Collectively

**Causes and Motives for Resistance:**

It is obviously important to locate the mainsprings of resistance to change. Table 6.13 and 6.14 give details of the causes and motives of resistance as reported by the respondents to the questionnaire.

**TABLE 6.13 : CAUSES OF RESISTANCE TO INNOVATIONS.**

| S.No. | Causes of Resistance      | No. of innovations in which reported | No. of respondents reporting the cause | *Percentage |
|-------|---------------------------|--------------------------------------|----------------------------------------|-------------|
| 1.    | Ignorance                 | 2                                    | 235                                    | 78.3        |
| 2.    | Insecurity                | 1                                    | 13                                     | 65.0        |
| 3.    | Economics                 | 1                                    | 32                                     | 64.0        |
| 4.    | Workload increase         | 2                                    | 41                                     | 13.7        |
| 5.    | Feels no need             | 1                                    | 9                                      | 4.5         |
| 6.    | Better alternative exists | 2                                    | 47                                     | 4.0         |

\* Percentage has been worked out to the total number of respondents participating to the innovations concerned.

**TABLE 6.14 : MOTIVES FOR RESISTANCE TO INNOVATION**

| S.No. | Motives of Resistance                         | No. of Innovations for which reported | No. of Respondents reporting the factor | Percentage |
|-------|-----------------------------------------------|---------------------------------------|-----------------------------------------|------------|
| 1.    | Fear of failure                               | 3                                     | 117                                     | 36.6       |
| 2.    | Preference for the familiar                   | 3                                     | 78                                      | 19.0       |
| 3.    | Did not fit in with their manifested outlook  | 3                                     | 36                                      | 11.3       |
| 4.    | Loss of prestige                              | 1                                     | 13                                      | 65.0       |
| 5.    | Tendency to revert to old practices           | 1                                     | 69                                      | 34.5       |
| 6.    | Pessimism about their own capacity to succeed | 1                                     | 13                                      | 13.0       |
| 7.    | Conviction that old methods are the best      | 1                                     | 7                                       | 7.0        |
| 8.    | Peer group's reaction                         | 1                                     | 5                                       | 5.0        |

From Table 6.13, it is found that increase in the workload of the teacher was the dominant factor for resistance to the innovation. This factor had been reported in case of two innovations, namely, objective based evaluation and internal assessment scheme. It is significant that the former innovation had been discontinued in all but two schools while the latter had been universally discontinued. Economic reason had been cited for the innovation, the Centre for Continuing Education where teachers had been put to certain financial difficulties in attending the courses. Insecurity in the form of fear of loss of job was reported as a cause for resistance with regard to the innovation, Higher Secondary Education, by the College teachers. All other causes had been prevalent among a small minority. Personal factors like increase in work load, insecurity and economic loss may therefore identified as the three important causes of resistance to an innovation.

From Table 6.14, it may seen that loss of prestige had been reported as the motive for resistance with regard to the innovation, Higher Secondary Education. The respondents in this regard were twenty college teachers, thirteen of whom identified this factor. Leaving out this isolated case, the dominant motive for resistance to an innovation was found to be the fear of failure of the innovation. Everyone would like to be in the winning side and the reluctance to be on a sinking ship was brought out when the respondents were interviewed. The two other motives each of which was identified with regard to three innovations were the preference of the client system for the familiar in contrast to the unfamiliar and the

perception that the innovation did not fit in with their manifested outlook. All other motives had not been reported widely in any significant manner. More than three motives were identified with regard to the innovations, Objective based innovation, College Complex, Internal Assessment Scheme, all of which had been discontinued in almost all schools.

Dealing with Resistance:

It may now be taken up for study how resistance was faced. Was any effort made to meet with the resistance and <sup>take</sup> ~~take~~ measures to get over resistance and with what result? What was the influence of resistance to a particular innovation on the system as a whole? It is found that no steps were taken to get over the resistance offered to the innovation, 'Internal Assessment Scheme'. It may be repeated that this was the only innovation which had been resisted by most of the client system. Since the resistance was very wide-spread and since the innovation involved a large number of teachers in the school, it was thought not possible to convert the resisters. It is also significant that the Headmasters themselves adopted a luke-warm attitude towards the innovation. Hence the innovation was allowed to be discontinued. With regard to four innovations - Modern Mathematics, Centre for Continuing Education, College Complex, and Staff Incentive Schemes, modification of innovations in the light of the resistance factors was made in some schools, so that they became acceptable to the client system. Non-cognisance of the resistance and going ahead with the implementation of the innovation brushing aside the objections and

resistance were reported in a few schools with regard to three innovations - Objective based innovation, College Complex and Staff Incentive Schemes. The innovations were continued in the schools which adopted an authoritative attitude to resistance while the same innovations were discontinued in the other schools. Remedial steps to remove the hardships caused were reported to have been taken with regard to one innovation which attempts to persuade the resisters individually and collectively were made with regard to another innovation. It is significant that no attempt was made to use the good offices of the opinion leaders to win over the resisters, nor was the forum of staff meeting used to deal with resistance. While with regard to objective based innovation and College Complex Scheme, the resistance was to the whole idea, it was just for a part of the innovation with regard to others. While the innovation as such was opposed with regard to College Complex Scheme, all other innovations were resisted only in respect of the process of implementation of the innovation. While three of the innovations which underwent structural or process modifications were continued, one other innovation, college complex scheme was discontinued, in spite of modifications made. Two innovations, Objective based evaluation and Internal Assessment Scheme were rejected and discontinued. With regard to other innovations, no substantial change in the idea took place.

Effect of Resistance on the Organisation:

Resistance to the innovation had its impact not only on the innovation but on the organisation as a whole. Table 6.15 gives particulars of the effect of resistance.

TABLE 6.15 : EFFECT OF RESISTANCE ON THE INSTITUTION

| S.No. | Effect                                         | How many schools affected |
|-------|------------------------------------------------|---------------------------|
| 1.    | Affect the normal working of the school        | 28                        |
| 2.    | Affect the implementation of other innovations | 17                        |
| 3.    | Affect the climate of the school               | 4                         |
| 4.    | Lead to formation of cliques                   | 3                         |

It may therefore be seen that resistance to the innovation had been reported to have affected the normal working of the school in just 28 out of 105 schools where resistance had been met with. The type of ~~disruption~~ that was reported to have been caused could not be adequately ascertained even during interviews of the respondents reporting resistance. In 17 schools, implementation of other innovations were affected. These schools had experienced resistance to either of the two innovations, objective based evaluation and internal assessment scheme. It was also gathered during interview of respondents that the positive gains due to resistance were also considerable since it acted as therapy.

A similar finding had been reported by Donald Klein (Bennis et al, 1976). The response to the query No.57 in the questionnaire also indicated this positive aspect of the resistance to an innovation. While 468 out of 1050 respondents had felt that the resistance was destructive for it retarded the progress of the school, 582 respondents considered resistance as healthy for it brought out the real difficulties in the implementation of the innovation. Except with regard to the internal assessment scheme, resistance was mild and did not have much impact on the school.

From the above analysis of the resistance factors, the following findings come out.

1. Participation by the client system in the implementation of an innovation seems to be a positive deterrent against any resistance being developed to the innovation.
2. Teachers constitute the major resisters to change.
3. Resistance to educational change comes more from within the system and seldom from agencies external to the education system.
4. Resistance is more often manifested indirectly.
5. Resistance is often exhibited by a small minority of the practitioners and most teachers prefer to take a neutral stand.

6. Increase of workload, economic factors and a sense of insecurity are the major contributing causes for resistance to an innovation.
7. Innovations resisted openly by most of the practitioners are discontinued.
8. Modification of the innovation and brushing aside objections are the common methods of dealing with resistance.
9. Recourse to opinion leaders or discussion at staff meeting is not resorted to to overcome resistance.
10. Generally, resistance is to a part of the innovation and not to the innovation as such.
11. Resistance to an innovation has therapeutic value.
12. Resistance to an innovation seldom affects the normal functioning of the school or the climate of the school.

#### 4.5 DISSEMINATION OF THE INNOVATION:

One other important aspect of the innovation process is how the idea spreads to other persons and other institutions. Item numbers 59 through 67 in the Innovation Profile (IP) sought information on the process of dissemination of the innovation.

Five innovations, namely Higher Secondary Education, Centre for Continuing Education, College Complex Scheme, Physical Education Evaluation Programme and Internal Assessment Scheme were not disseminated by the practitioners to other institutions. With regard to another innovation, namely, Modern Mathematics, the part played by the practitioners in the role of dissemination was very much limited. All these six innovations were sponsored by the government or the Department of Education. While Physical Education Evaluation Programme was introduced simultaneously in all the schools in the State and consequently there was no need for dissemination of the innovation by the practitioners, the innovations, Higher Secondary Education and the Centre for continuing Education were in the nature of things beyond the scope of the practitioners to spread to other institutions. Their role was limited to making people aware of the existence of the innovations and the implementation depended on the largess of the government who had to select the institution for implementation of the innovation. Internal Assessment Scheme was introduced in a phased programme, extending the innovation every year to 250 new schools. But the scheme itself ran into rough weather due to resistance and was discontinued. Hence there was no question of its dissemination.

The college complex scheme was also another innovation of short life and it depended on the needs of the individual institutions and hence the practising institutions had only a limited role to play in the dissemination of the innovation. With regard to Modern Mathematics, while all the schools under the Board of Secondary Education implemented the innovation simultaneously, the Anglo Indian and Matriculation Schools were not covered by the innovation. These schools took it as an affront to their capabilities and prestige and hence it was the schools themselves which sought information on the innovation and approached the government to introduce the innovation in their schools also.

It is therefore seen that some kind of dissemination had taken place only with regard to four innovations, namely, Objective based Evaluation, Work Experience, Library-centred Teaching and Staff Incentive Schemes. The headmaster had been identified as the principal person who passed on the idea to other institutions with regard to three innovations - Work Experience, Library Centred Teaching and Staff Incentive Scheme. The inspecting officers of the Department of Education had also played a significant role in spreading the idea to prospective practitioners with regard to all the four innovations. With regard to Staff Incentive Scheme, the teachers told the idea to teachers of other schools. The concept of objective based evaluation, work experience and library centred teaching were conveyed to other schools through mostly personal meetings with teachers and heads of schools. The Staff Incentive Scheme was made known to others during informal get-togethers

of teachers. Of course, the departmental officers also passed on the idea to other schools during their annual inspection of the schools, or at the time of meeting of heads and teachers of schools or during visits to schools. It is significant that the mass media were not made use of for conveying the idea.

Once the idea was let known to others, the recipients of the idea reacted positively with regard to the innovations, Work experience, Library Centred Teaching and Staff Incentive Scheme while a neutral attitude was taken with regard to objective based evaluation. The heads of schools visited the schools to gather further information about the innovations. Often they were accompanied by a few teachers of their own schools and sometimes they deputed their teachers to observe the innovation in practice. Mostly teachers of other schools got further information about the idea through their own headmasters though a few used the personal visits for the purpose. Further information was sought on the following aspects of the innovations (1) Details of the concept (2) Process of implementation and (3) Financial aspect. Some of the recipients of the idea also desired to get further information about the advantages of the innovation and the sources of the idea.

After becoming aware of the innovations, nine institutions introduced work experience in their school, five schools adopted library centred teaching and one school put the staff incentive scheme into practice. All the innovations were introduced as they were presented to them without any change or with slight modifications without affecting the structure of the innovation.

While the schools who introduced work experience programmes continued with the innovation, all the five schools who introduced library centred teaching discontinued the innovation for the same reasons the schools which introduced them originally discontinued the innovation. The Staff Incentive Scheme introduced in one school continued to be in operation.

It is a moot point to consider why dissemination of innovations did not take place on a large scale. During the interview by the investigator of the headmasters, teachers, inspecting officers and N.C.E.R.T./S.C.E.R.T. personnel, an attempt was made to find out the apathy of the educational institutions to spread and accept new ideas. Several factors for this phenomenon were given by the interviewers. One common factor mentioned by almost all the practitioners for not passing on the idea was their reluctance to show off. A kind of privacy with the operation of the school system was visible. Even the schools identified by research workers and inspecting officers as the most innovative institutions and accepted by other schools as such confined their activities to practising the innovation in their own schools and did not make any significant attempt to pass the idea to other schools. "I do not want to poke my nose into others" attitude was very much evident. The practitioners thought that if any school was interested in any innovation they were practising they willingly shared their experience with the school, but they themselves would not like to tell other schools of their own accord what they were doing. This was not anything of an Ivory Tower attitude, but they thought it was the duty of

the inspecting officers and others to spread the idea if they found it worthwhile. Another factor identified was the teacher defensiveness, that is, teachers in other schools would not like to accept an idea from some other school. There was also a common misconception that any innovation meant additional work for them and that the work load in terms of preparation and implementation would be considerable. Conservatism among teachers was another factor that prevented proper dissemination of innovations. Except for the departmentally sponsored innovations, the change agents were mostly internal to the school and they had neither the mind nor the authority to reach others. Lack of confidence in their own thinking and practice was also revealed by some respondents, who felt they themselves had become aware of the innovation from some other source and they had not the necessary competence to pass it on to others. A general feeling that the colleges of education by virtue of their superior knowledge and expertise should pioneer in the spreading of innovation was also expressed by a few. The client system was also asked why they did not try to know of the innovations practised in their neighbourhood and why they did not take steps to try them in their own schools. The following reasons were given out (1) Their accountability for examination results. Most felt that innovations would hamper the normal class room work and the performance of students would therefore be affected considerably. (2) Rigid school procedures. The rules and procedures weighed too much with the respondents and the absence of any flexibility stood in the way of try-out of any innovation. This was mostly reported by government and quasi-government managed institutions

where they had to seek the permission of their higher authorities with regard to any expenditure. Even innovations of a non-financial nature required clearance by their superordinate powers.

(3) Product measurement problems. The respondents were not clear about the outcome of the innovations and were doubtful about the evaluation of the results. (4) Absence of rewards. They felt that not only no rewards in the form of financial incentives or appreciation were given for trying out innovations, but they feared they would incur punishment if the innovation failed with disastrous effect on the system. (5) Low personnel development investment. The respondents expressed their opinion that there had been no sustained programmes for professional development of the teachers. There were many teachers in the system who had not attended any in-service programme for decades. The lack of such exposure to personnel development programmes had led to a rather closed mind and teachers wanted to continue to follow a risk-free traditional way of life.

The above discussion leads to the following findings:

1. No initiative to disseminate government or department-sponsored innovation is taken by the practitioners of the innovations.
2. The headmasters are the principal persons involved in the dissemination of innovations.
3. The inspecting officers play a significant role in spreading a new idea practised in one school to other schools in their area.

4. Mass-media - newspapers, professional journals - are seldom availed of for dissemination of innovations.
5. Ideas are passed on to other persons through personal meetings and during informal get-togethers.
6. Inspecting Officers make use of their official and unofficial visits to schools to inform the teachers about innovations being practised in other schools.
7. It is the heads of schools who seek further information about an innovation. They gather information through personal visits to the institutions practising innovations or through deputing their own teachers to the institutions.
8. Information is generally sought about the basic concept, the process of implementation and the financial aspects of the innovation.
9. Schools practising innovations are reluctant to pass on the ideas to other institutions for the following reasons:
  - (1) desire not to show off. (2) desire not to get into others' paths (3) sense of privacy (4) feeling it is the schools that should seek information. (5) feeling it is the department and the colleges of education that should disseminate innovations (6) teacher defensiveness (7) conservatism (8) absence of change agents and (9) Lack of confidence.
10. Schools do not try to know about innovations practised in other schools for the following reasons: (1) Accountability for examination results; (2) rigid school procedures; (3) product measurement problems; (4) absence of rewards and (5) low personnel development investment.

## 5. PERSONNEL DIMENSION OF CHANGE:

Education is a social system. Not only do schools exist for education in community and social living, the school itself is a society, in which a good number of persons are involved. It is necessary to identify the persons who are involved in the change process in the school system and find out their roles. This section is devoted to a study of this dimension of change.

Under the personnel dimension, a study of the adopter categories, the change agents, the opinion leaders and the characters in the drama of change was made with particular reference to their intervention role.

### 5.1 THE ADOPTER CONTINUUM:

#### The distribution of adopter categories:

The Rogerian categorisation of the adopter categories namely the innovator, the early adopter, the early majority, the late majority and the laggard was adopted for the purpose of the study. The distribution of the adopters among the different categories is given in Table 6.16.

**TABLE 6.16 : DISTRIBUTION OF ADOPTER CATEGORIES**

| S.No. | Category       | No. of persons | Percentage to the total |
|-------|----------------|----------------|-------------------------|
| 1.    | Innovator      | 175            | 6.8                     |
| 2.    | Early Adopter  | 543            | 21.3                    |
| 3.    | Early Majority | 1014           | 39.0                    |
| 4.    | Late Majority  | 744            | 28.7                    |
| 5.    | Laggard        | 110            | 4.2                     |
|       | Total          | 2586           | 100.0                   |

The Table given above was prepared with reference to the responses given by the headmasters. It may be noted that it was only a mental estimate by the headmasters and they did not make any scientific approach to the categorisation. Further, since a large number of innovations had not been tried in each and every school, there was not sufficient opportunity for the headmaster to study the consistency in the innovativeness of the teachers. Further, not all headmasters had furnished the figures. The table was constructed on the basis of the particulars made available. Though the figures suffered from these deficiencies, it may be seen that they more or less conformed to the distribution of adopter categories as found in the studies made by Ashma Doctor (1974) and Sathyavathi (1980).

#### CHARACTERISTICS OF THE ADOPTER CATEGORIES:

Thirteen characteristics identified in earlier studies by Rogers and Shoemaker (1976) were taken up for study and the headmasters were asked to place the various adopter categories on a linear scale for each of the characteristics. No attempt was made to measure the characteristics of individual teachers with regard to these characteristics. The innovators were placed on the high side of the linear continuum with regard to the following characteristics. (1) Social participation (2)cosmopolitaness; (3) change agent contact; (4) movement with his colleagues; (5) exposure to mass media; (6) knowledge of innovations; (7) empathy; (8) rationality; (9) attitude toward risk; (10) aspiration and (11) opinion leadership.

The laggards were placed at the low extreme of the linear continuum with regard to the above characteristics. The innovators were placed at the low extreme and the laggards at the high extreme of the linear continuum, with regard to dogmatism. The innovators were considered to be modern in their norms while the laggards were reported to be traditional in their norms. The other three categories, the early adopter, the early majority and the late majority were placed in between the two extremes in their linear continuum in the same order. This is in conformity with several of the findings reported by Rogers and Shoemaker (1976).

#### Mobility of Adopter Categories:

Do innovations change the attitude of practitioners? Does involvement in the process of adoption of an innovation bring about any change in the client? It was proposed to find out answers to these questions by studying the changes that took place in the distribution of the adopter categories. Here too the particulars furnished by the headmasters were only rough estimates. Table 6.17 presents the movement of practitioners from one adopter category to another in the course of adoption of innovations.

**TABLE 6.17 : MOVEMENT OF ADOPTER CATEGORIES IN THE COURSE  
OF ADOPTION OF INNOVATIONS**

| From<br>To | I   | EA   | EM   | LM   | L   | TOTAL | PERCENTAGE |
|------------|-----|------|------|------|-----|-------|------------|
| I          | 175 | 26   |      |      |     | 201   | 7.8        |
| EA         |     | 464  | 117  | 4    |     | 585   | 22.6       |
| EM         |     | 53   | 863  | 133  | 12  | 1061  | 41.1       |
| LM         |     |      | 34   | 607  | 33  | 674   | 26.0       |
| L          |     |      |      |      | 65  | 65    | 2.5        |
| TOTAL      | 175 | 543  | 1014 | 744  | 110 | 2586  | 100        |
| Percentage | 6.8 | 21.3 | 39.0 | 28.7 | 4.2 | 100   |            |

I : Innovator; EA : Early adopter; E.M. : Early Majority;  
LM : Late Majority; L : Laggard;

Upward movement :  $26 + 117 + 4 + 133 + 42 + 22 = 325$

Downward movement:  $53 + 34 = 87$



The number of persons who had moved from a lower category to a higher category was 325, constituting 12.5% of the total number of adopters. The numbers of persons who moved downward from a higher to a lower category was 87 constituting 3.4% of the total population. The net gain was therefore 9.1%.

The downward movement was reported with regard to two innovations only namely College Complex Scheme and the Comprehensive Internal Assessment Scheme. It may be noted that the latter innovation met with stiff resistance and had to be abandoned. The downward movement of adopter categories were the highest (70 persons) with regard to <sup>back</sup>the innovation and it was the only innovation where the downward mobility was greater than the upward mobility. The largest exodus had taken place in the course of the adoption of the innovation, Centre for Continuing Education in which 72 persons were reported to have moved up while there was no single case of downward movement. The in-service professional development programmes were stated to be the cause for such an upward movement. Two other innovations where over 25% of the teachers showed an upward mobility in the course of the process of adoption of innovations were Modern Mathematics and Library Centred Teaching, both of which had intensive training programmes built into the Innovation. It may therefore be concluded that provision of good in-service programme with regard to an innovation promotes the qualitative improvement of the adopter categories. The least number of change that had been noticed was with regard to the innovation 'Work Experience' in which only 3 persons moved upward. But this innovation having been taken up by innovative institutions, the distribution of

the practitioners among the different adopter categories itself revealed a higher frequency among the top categories. While no laggard was reported in the schools for the innovation, 19% of the practitioners belonged to the innovator category, 22% to the early adopter category and 28% to the early majority category, only 31% belonged to the late majority group. A study may be made to find out if certain innovations with specific characteristics contribute to the innovativeness among individuals and consequently an upgrading of the adopter categories.

The findings that emerge from the above analysis are as follows:

1. Though all the categories of adopters are reported in all the schools, there is a reluctance on the part of headmasters to identify the laggards.
2. The innovator, the early adopter, the early majority, the late majority and the laggard are placed in the same order in a linear continuum with regard to the characteristics of adopters.
3. The innovator is on the high extreme and the laggard on the low extreme of the linear continuum with regard to the following characteristics (i) Social participation (ii) cosmopolitanness; (iii) change agent contact (iv) movement with his colleagues (v) exposure to mass media (vi) knowledge of innovations (vii) empathy (viii) rationality (ix) attitude to risk (x) aspiration and (xi) opinion leadership.
4. The innovation is on the low extreme and the laggard on the high extreme of the linear continuum with regard to dogmatism.

5. The innovators are more modern in their norms than others and the laggards are more traditional in their norms than others.
6. In the course of the adoption of innovation, an upward movement of adopter categories is generally seen.
7. A downward movement of adopter categories in the course of the adoption of innovation is likely to take place in the case of innovations that meet with stiff resistance.
8. An upward movement of adopter categories is likely to happen in the case of innovations which include professional development programmes.

#### 5.2 THE CHANGE AGENTS AND THEIR INTERVENTION:

In the previous section, a study of the target public, that is, the adopters in an institutional context was made: In this present section an effort will be made to study the problems of change in terms of the change agents, that is, those who are mainly responsible for doing the changing. Question numbers 33 through 38 and 41 in the Innovation Profile (IP) deal with the change agents, their characteristics and their role.

#### Who are the change agents in the School System?

Table 6.18 gives the details of the change agents and the number of innovations they were associated with.

**TABLE 6.18 : NUMBER OF INNOVATIONS ASSOCIATED WITH  
DIFFERENT CHANGE AGENTS.**

| S.No. | Change agent                       | No. of Innovations<br>associated with |
|-------|------------------------------------|---------------------------------------|
| 1.    | Government/Department of Education | 6                                     |
| 2.    | NCERT/SCERT                        | 3                                     |
| 3.    | Management                         | 2                                     |
| 4.    | Headmaster                         | 2                                     |
| 5.    | Professional organisations         | 2                                     |

**NOTE:** The total exceeds the number of innovations studied since more than one change agent was identified with regard to four innovations.

From the above table, it may be seen that the Department of Education had performed the role of change agent with respect to six of the ten innovations studied. Three of the innovations - Higher Secondary Education, Modern Mathematics and the Centre for Continuing Education - had been institutionalised while two innovations - Physical Education Evaluation Programme and the Internal Assessment Scheme had been discontinued. One other innovation, College Complex Scheme, though continued in a few schools had been considered to have only a short-range role and would be allowed to wither away. The National Council of Educational Research and Training by itself and in collaboration with the SCERT and the Department of Education promoted three

innovations - Objective based Evaluation, Centre of Continuing Education and Internal Assessment Scheme. While the Centre of Continuing Education was continued, the Internal Assessment Scheme had been discontinued in all schools and the Objective based Evaluation had been discontinued in all schools but two schools. It is significant that the Centre for Continuing Education programme was a funded scheme, with the total expenditure shared by NCFRT and the State Government. The headmasters had been identified as the change agent with respect to two innovations Objective based Evaluation and Work Experience, of which the latter had been institutionalised. The managements were reported to be the change agents for two innovations - the Work Experience and the Staff Incentive Scheme, both of which were continued. The managements were committed to the Basic concepts of the innovations concerned with regard to both these innovations. Two professional organisations - the Association of Mathematics Teacher of India and the S.I.T.U. Council of Educational Research - were the change agents for two innovations, the former for Modern Mathematics and the latter for the Library Centred Teaching. It may therefore be seen that, while some innovations promoted by a change agent got institutionalised, <sup>Some others promoted by the same agent failed.</sup> An analysis of this factor will be done in a subsequent section.

#### The Interventionist Roles played by the Change Agents:

##### How many influenced by the Change Agent:

The change agents had been reported to have influenced most of the teachers with regard to six innovations, some of the teacher with regard to two innovations and a small number of teachers with

regard to one innovation. The change agent had exercised influence over none of the teachers with regard to the other innovations, namely Objective based Evaluation. With regard to Modern Mathematics, though the change agent had influenced only a small section of the teachers, they formed an influential section of the population and constituted the opinion leaders.

Helping methods adopted by Change Agents:

Table 6.19 presents the helping methods adopted by the change agents with respect to the clientele population.

TABLE 6.19 : HELPING METHODS ADOPTED BY THE CHANGE AGENTS

| S. No. | Helping Method                                   | No. of Innovations where reported | No. of respondents reporting the method |
|--------|--------------------------------------------------|-----------------------------------|-----------------------------------------|
| 1.     | Creating an intent to change                     | 9                                 | 1183                                    |
| 2.     | Developing a need for change                     | 8                                 | 928                                     |
| 3.     | Translating the intent to action                 | 8                                 | 814                                     |
| 4.     | Diagnosing the problems                          | 5                                 | 708                                     |
| 5.     | Establishing a change relationship               | 8                                 | 689                                     |
| 6.     | Stabilising change and preventing discontinuance | 6                                 | 592                                     |

While with regard to three innovations - Higher Secondary Education, Modern Mathematics and Library Centred Teaching, all the six helping methods had been reported, with regard to Objective based Evaluation, only two methods - creating an intent to change in the client and translating the intent to action - were

identified and the change had not developed a need for change, nor established a change relationship. With regard to the three innovations - Objective based Evaluation, Internal Assessment Scheme and the College Complex Scheme which had been discontinued in almost all schools, the helping methods of diagnosing the client's problems and stabilising change and preventing discontinuance were not at all reported. The Change agent, the N.C.E.R.T. in two cases, was not able to internalise itself and it did not discharge its complete role as a change agent to institutionalise the innovations which it had promoted. It is significant that with regard to all the innovations that had been institutionalised, the four helping methods - developing a need for change, creating an intent to change, translating the intent to action and stabilising change and preventing discontinuance - were reported.

Description of the role of the Change agent:

While the role of the change agent had been described as quite helpful with regard to all the innovations taken up for study, his role was also considered highly rewarding with regard to eight innovations. It is significant that no respondent considered the role of the change agent as superfluous and unnecessary or a nuisance. During interviews, headmasters and teachers expressed their feeling that the role of the change agent, especially the research based organisations, NCERT/SCERT, was inadequate and stopped with passing on the idea to them. They did not get guidance and assistance when they faced problems in the course of adoption of innovations.

Characteristics of the Change agent:

The change agent was described as friendly and understanding and persuasive. With regard to the change agent being a super-ordinate authority, the respondents were equally divided in describing the same as democratic or authoritarian. The headmaster - change agent was described as cosmopolite. While the change agents had been universally reported to be higher in education and status than the respondents, the values of the change agent were considered the same by a majority of the respondents. A minority (38%) of the respondents considered the values of the change agent to be different.

Mode of intervention of change agent:

The change agent mostly dealt with the respondents directly with regard to four innovations and through the headmaster with regard to four other innovations. Recourse to opinion leaders was reported only in the case of two innovations, namely, Higher Secondary Education and Modern Mathematics, that too on a limited scale.

All the six strategies of the change-agent - promoting, informing, demonstrating, training, helping, servicing and nurturing - had been identified to have been adopted with regard to six of the ten innovations, and it is significant that except the Library Centred Teaching, all the other five innovations had been institutionalised. While the Physical Education Evaluation Programme reported the first five strategies, -the final strategy of nurturing was absent. With regard to Objective based Evaluation

and Internal Assessment Scheme, the last three strategies - helping, servicing, and nurturing - were not adopted by the change agent. The innovation, College Complex Scheme, saw the use of the strategies-promoting, informing and helping and the strategies of demonstrating, training, servicing and nurturing were not adopted. It is significant that all the innovations where the strategy of nurturing was absent, the innovation had not been institutionalised.

The above analysis leads to the following generalisations with respect to the change agents and their intervention:

1. The Department of Education and the Research Councils are the prime change agents with regard to educational change.
2. There is no link between the change agent and the innovation getting institutionalised.
3. The Department of Education as change agent influences most of the practitioners.
4. The helping methods adopted by the change agents are: (1) creating an intent to change (ii) developing a need for change (iii) translating the intent to action (iv) diagnosing the problems of client (v) establishing a change relationship and (vi) stabilising change and preventing discontinuance.
5. All innovations that are institutionalised report four helping methods: (i) developing a need for change (ii) creation of an intent to change (iii) translating the intent to action and (iv) stabilising change and preventing discontinuance.

6. The role of the change agent is generally quite helpful and highly rewarding and seldom considered superfluous and unnecessary or a nuisance.
7. The change agent has the characteristics (i) friendly and understanding (ii) persuasive
8. The change agent is higher in education and status than the practitioners, and the values of the change agent is generally the same as that of the practitioners.
9. The change agent generally dealt with the clientele directly or through the headmaster.
10. Opinion leaders are seldom approached by change agents to deal with the client system.
11. The six strategies adopted by the change agents in their intervention with the client system are: (i) promoting (ii) informing (iii) demonstrating (iv) training (v) helping and (vi) nurturing
12. Innovations where the change agents do not adopt the strategy of nurturing are seldom institutionalised.

### 5.3 THE OPINION LEADERS AND THEIR ROLE:

In all the schools, more than one opinion leader had been reported by the practitioners. Though generally the opinion leaders were internal to the institution being co-teachers in their own cadre, the teachers' unions were widely reported as opinion leaders.

The characteristics reported about the opinion leaders were: (1) His feelings were in tune with those of the practitioners (2) The opinion leader reflected the aspirations of the client system. (3) The opinion leader took up the case of the practitioner with courage to higher authorities. The opinion leaders identified with regard to the innovations, Work Experience and the Library Centred Teaching were reported to be innovators par excellence.

Recourse to opinion leaders by the promoter of change was reported in two cases only (1) Higher Secondary Education (2) Modern Mathematics. In both these innovations, the opinion leaders were actively involved in the implementation of innovation and consequently resistance to the innovation was avoided to a great deal.

Opinion leaders as resisters of change were reported in the case of department sponsored innovations - Higher Secondary Education College Complex Scheme and Internal Assessment Scheme. The resistance by opinion leaders led to some modification of innovation or to discontinuance of the innovation.

Opinion leaders had played a positive role in the implementation of the innovations - Modern Mathematics and Work Experience.

Though the existence of the opinion leaders was known to the change agents, the change agents generally did not seek their support for the implementation of the innovation. The following reasons were given for the non-utilisation of the services of the opinion leaders. (1) Opinion leaders were often the teachers and were known for their resistance to any change (2) Opinion leaders should not be pampered too much and given greater importance (3) No intermediaries were necessary in a small system like school and (4) Opinion leaders never used to commit themselves to any proposal.

The following generalisations are therefore made about the opinion leaders and their role in the implementation of innovation.

1. Opinion leaders exist in every school.
2. A teacher of his own cadre is generally accepted as the opinion leader by a teacher.
3. The opinion leader external to the system exercising a great influence on teachers is the teachers' union.
4. The characteristics reported of the opinion leaders are (i) his feelings are in tune with the client system and (ii) He reflects the aspirations of the client system and (iii) He takes up the case of the teachers with higher authorities.
5. Recourse to opinion leaders is seldom made by the change agent. The reasons given out for this are: (i) Opinion leaders are known resisters of change (ii) Opinion leaders need not be given too much importance (iii) There is no need for intermediaries and (iv) Opinion leaders are evasive.
6. Recourse to opinion leaders leads to reduction of resistance to a great degree.

#### 5.4 THE DRAMATIS PERSONAE IN EDUCATIONAL CHANGE SCENE:

In this section, a study of the different kinds of persons, directly or indirectly connected with decision making in education at one level or other or influenced by decisions is attempted at.

##### The Elected Politicians:

By elected politicians was meant that class of governmental leaders - Ministers and members of the legislative assembly and

legislative council - who are held politically responsible for the welfare of the society as a whole. In particular, this study confined itself to the role played by the Ministers for Education and the legislature<sup>6/2</sup> in educational change at State level and relied on the debates in legislature, pronouncements of the Ministers for Education in the legislature and outside and on the interview of the Minister for Education by the investigator.

The first observation is that educational questions seldom emerged as major issues within the context of national elections. The problems of education took a back seat in relation to the economic and social problems of the day. Though the manifestoes of every political party included a reference to education, it was more or less of a general nature and did not spell out in detail clearly the educational objectives of the parties concerned and the changes they would like to bring about. Often, it was a statement common to all parties that they would like to make education "relevant to the needs of the society". Another statement common to four out of the six manifestoes studied concerned the service conditions of teachers. No significant reference to the changes the parties would adopt to attain the objectives was discernible in any of the manifestoes. Two manifestoes; one of the ruling party in Tamilnadu and another party which did not have more than half a dozen representatives in the legislature - spoke of vocationalisation of education. Therefore it was seen that, for the most part, education did not create national headlines during electoral periods and was not a

preoccupation of most career politicians at high levels of government. This was in conformity with the finding of Fred S. Coombs (Edmund King, 1977).

There were six seats in the legislative council for which teachers elected their representatives. Their commitment was more for obtaining concessions for teachers and improvement of service conditions of teachers rather than bringing out any change in educational system. It is significant that in Tamilnadu, teachers had always preferred a non-politician to a politician as their representative on the legislature though a few regional political parties had nominated their own men as candidates. This is in contrast to the political character of legislature in the neighbouring states. The teacher-legislators had not only been non-politicians but had adopted more often an apolitical attitude with reference to several issues coming before the legislature. This non-political character of the teacher legislatures<sup>6v4</sup> had been more a curse than a blessing for their role in the decision-making tended to be very much limited.

Legislature<sup>6v4</sup> dealt with educational issues through question hours, budget debates, debates on policy statements and call attention motions. All the call attention motions had been related to agitations by students or teachers or to issues concerning the governance of educational institutions. Almost all the questions tabled and pertaining to the education department related to service conditions of teachers. Budget debates were generally based on the demands for education as

contained in a detailed statement. The administrative reports of the Education Department also formed a subject for debate, but their reports were always belated. Educational change as it were was never the subject for discussion at the legislature. Discussions were centred around opening a school in the neighbourhood of a legislator or upgrading of a school or sanctioning of additional teachers. It is significant that even teacher legislators never initiated any discussion on educational change or proposed <sup>any</sup> alternatives in education. The acceptance of the status quo and the reluctance to suggest any radical change were very much in evidence in the legislature.

The Minister for Education alone dealt with any education change. He participated in discussions at State and National levels in several educational forums like State Ministers' Conference, N.C.E.R.T., C.A.B.E. etc. and attended meetings of professional bodies. His exposure to educational change was quite satisfying. He was to lay down policies and also implement decisions taken at National level in his State. Two such decisions were the introduction of ten plus two plus three pattern of education and upgrading school curricula. It is therefore significant that both the government sponsored innovations - Higher Secondary Education and Modern Mathematics - were borne out of this exercise. The Minister for Education in Tamilnadu had shown considerable interest in the dissemination of knowledge about the innovation. Once the decision to introduce higher secondary education was taken, it was the Minister for Education who decided

on its introduction on a massive scale, instead of the phased programme suggested by the officials. He also visited every nook and corner of the State and spread the message to the rural masses. He also ordered sanctioning of necessary infrastructure. This political support to the scheme enabled its successful implementation. This supports the finding of Kalloo and Lundgran (King, 1977) that once a specific policy was proposed, the politician assumed an important role as ratifier of that change.

#### EDUCATION OFFICIALS:

There are two categories of education officials, the first being administrators in position at the Secretariat who view themselves as executives and whose forte is administrative skill rather than educational expertise and the second being professional educators - career educators who have occupied positions from teachers to Director of Education and who consider themselves as specialists in the field of education. There is also another category of officials, not technically education officials, in other departments of government who work their will upon education policy in indirect but important ways. For example, it is impossible to develop a very complete understanding of why educational policy changes or does not change in a state without enquiring into the role the finance ministry plays in the budgetary process and the pressures that are brought to bear upon education policy by other sectors of government such as health, social welfare, agriculture, commerce or labour. But this study restricted itself to that category of education officials defined as professional educators.

During the last quarter of a century, Tamilnadu had seen seven Directors of School Education and except for one Director of School Education who held the office for a short time, every Director had been identified with the introduction of an innovation. Though education officials were ultimately accountable to elected politicians, it was evident that it did not imply that they did not have minds of their own.

The first of the seven Directors had introduced several innovations like School Meals Programme, School Improvement Conferences, Free Uniforms, etc., The next one had rather played a passive role, there being no innovation sponsored by him. The innovations introduced by successive Directors and taken up for this study were Objective based Evaluation, College Complex Scheme, Physical Education Evaluation Programme and Internal Assessment Scheme. It is significant that all these innovations had been discontinued in almost all schools.

While the Director who introduced the innovations, Objective based Evaluation restricted his role to making innovative headmasters aware of the existence of the innovation and providing them with necessary technical skills through organisation of workshops with the help of N.C.E.R.T. He did not take any administrative steps to implement the innovation in the schools. He himself was committed to the concept of objective based evaluation and his earlier attempts to reform the examination had met with stiff resistance and resulted in its withdrawal. Among the reasons for the failure were non-exposure of practitioners to

the concept of modern evaluation, absence of training in item writing and introduction of the innovation straightaway at School Final examinations. On his being elevated to the office of the Director of School Education, he probably tried to set right these defects and wanted the schools to try out the innovation by themselves before it was reintroduced at the Public Examination level. The innovation was introduced in the schools on the initiative of the individual headmasters. The innovation could not be sustained for long due to several factors such as internal resistance due to increase in workload and lack of competency in the new techniques and external factors like the absence of linkage with the Public Examination system. The Director of School Education did not make any follow-up-work nor did he play any assisting role to the schools in the adoption of the innovation. He retired soon after the introduction of the innovation and the innovation was discontinued in most schools.

Two other innovations which were introduced with great enthusiasm by the Directors of School Education and which were short lived were the Physical Education Evaluation Programme and the Internal Assessment Scheme. While the former was introduced by a Director who himself was a great sportsman, the latter innovation owed its existence to an academically motivated Director. Both directors extended their full support to the schemes and the whole departmental apparatus was geared to the implementation of the innovations. Both directors had taken care to give intensive and effective training to the practitioners with the help of well qualified experts. Colleges of Physical Education and N.C.E.R.T.

Detailed instructions and guidelines for implementation of the innovations were issued as printed booklets. While the Physical Education Evaluation Programme was introduced in all the schools simultaneously, the Internal Assessment Scheme was introduced in a phased programme, taking 250 schools each year. The practitioners were also motivated with appeals to their sense of pride and zeal in participation in worthwhile changes. In spite of all these positive action, both innovations withered away as soon as the directing force, namely the Director of School Education disappeared from the scene - with the change in the incumbency of the post. The incoming Directors did not evince much enthusiasm in keeping the innovation going and also wanted to introduce their own pet schemes. The subordinate departmental officials were quick to change their loyalties to the new schemes, leaving in lurch the innovations in vogue. When the schools found certain difficulties in the operation of the innovation and when the helpful directing force was not there, the innovations were just allowed to be discontinued in spite of the massive inputs in terms of finance, training and materials that had been given to the innovation.

The fourth innovation, the College Complex Scheme, initiated by another Director of School Education was a supporting measure to a governmental sponsored innovation, namely, Higher Secondary Education. The Director of School Education who introduced the innovation retired even before the innovation could be adopted. This innovation depended on the support and good will of another departmental officer, namely, the Director of Collegiate Education.

This support was not forthcoming and the innovation even during its infancy limped and struggled for existence. The initiative on the part of individual headmasters and the personal helping tendency on the part of individual college teachers helped the sustenance of the innovation much more than any assistance from the departmental officers. The innovation was implemented only in a very limited role of utilising the college laboratory for conducting practicals for higher secondary students and the full bloom of the innovation as a permanent linkage between the school system and the college system was not all presented to the schools even though the Director of School Education initiating the innovation had mentioned about this aspect of the innovation. Hence the innovation was discontinued as soon as the short range goal was accomplished and as soon as the schools had their own laboratories got ready.

An analysis of the four innovations initiated by the Director of School Education reveals the lacunae in the implementation process. Each innovation was more or less considered as that of X's or Y's and never thought to be a departmental innovation. Hence the commitment of the department and the subordinate officers was totally lacking.

#### The Research Agencies:

Three agencies of educational research had been known to have participated in educational change in Tamilnadu. They are: (1) The National Council of Educational Research and Training, New Delhi (2) The State Council of Educational Research and Training, Madras (3) The South Indian Teachers' Union Council of Educational Research. While the first two agencies are government-sponsored on

the last was promoted by a premier teachers' organisation, South Indian Teachers' Union. Though the Union promoted the research agency, it existed independently.

The National Council of Educational Research and Training is the apex research body in India and one of its functions is to disseminate worthwhile ideas throughout the country. It discharges this function by itself or through the State Councils of Educational and Research Training, wherever such bodies exist. It promotes innovations in schools through funding of approved projects, conduct of seminar readings in which innovations are reported, training teachers in research methodology, publication of journals and books with a focus on innovations carried out in the country and award of prizes for innovative projects. It associates itself closely with APEID and ERIC at the continental and international levels to propagate innovations. In the present study, the NCERT was associated with four innovations - Objective based Evaluation, Centre for Continuing Education, Internal Assessment Scheme and Work Experience. The NCERT was involved in the development and diffusion stages with regard to three innovations and participated in the adoption stage also only with regard to one innovation, that is, the Centre for Continuing Education. It is significant that the last innovation had been continued. The N.C.E.R.T. not only provided technical support, but lent financial support to this innovation. There was continuous monitoring of the working of the innovation and the innovation had therefore been sustained. With regard to the other three innovations the N.C.E.R.T. performed the following tasks (1) Formulating a solution to an operating problem (2) constructing an innovation

package for institutional use and (3) creating wide-spread awareness of the innovation among the practitioners. With regard to Objective based Evaluation and Work Experience, the N.C.E.R.T. also built conviction among the practitioners by affording an opportunity to examine and assess the operating qualities of the innovation. The N.C.E.R.T. left the next three stages, testing, operationalising and establishing to the individual schools and the S.C.E.R.T. It was therefore found that though over 50 schools were exposed to the concept of Work Experience through the Workshop conducted by the N.C.E.R.T. only five schools were reported to have adopted the innovation. Even among these five schools, three schools had a modified form of the innovation already in existence in their schools. The innovation, Objective based Evaluation was introduced to a set of sixty senior headmasters and paper setters in a thirty-day workshop spread over three phases. The training was quite intensive and was given by top experts in evaluation. Most participants went out of the workshop with conviction about the utility of the innovation and with confidence that they could implement the innovation in their schools. Actually, as they completed the second phase, they were asked to try out the innovation on an experimental basis before they returned to the workshop for the final phase. Yet the innovation had been discontinued in all but two schools. The reasons given out for discontinuance were (1) internal resistance; (2) person introducing the change leaving the institution and (3) non-adoption of the innovation by the State for their examinations. The N.C.E.R.T. which

introduced the innovation to schools did not persuade sufficiently the government to change the pattern of questionpapers of the public Examinations. In an examination-oriented system, it was too much to have expected the innovation introduced voluntarily by a few schools to influence decision-making at State level. Probably had the Director who arranged for the training of teachers in objective based evaluation continued in his post, this change might have been brought about. The succeeding Directors did not evince much interest in the innovation. Another innovation introduced by the N.C.E.R.T. was the Internal Assessment Scheme. There was total commitment to the innovation on the part of <sup>the</sup> Director of School Education. The idea was implemented in a phased programme. Sufficient training was given to the practitioners. A Comprehensive guide book was supplied to all schools. Yet the innovation was discontinued in all schools due to the following factors: (1) There was resistance due to heavy load of clerical work; (2) The Director ~~of~~ who introduced the innovation <sup>left</sup> the scene; (3) No financial provision was made for the recurring expenditure and (4) Without giving at first training in planning and organising activities, the evaluation of the activities was taken up. An analysis of all the four innovations reveals a common factor that the N.C.E.R.T. was able to influence the individual Director of School Education with regard to any innovation and the Department as such was not committed to the innovations. There was no monitoring reported about the innovation introduced. The Field Adviser, N.C.E.R.T. stationed at Madras suffered from paucity of funds and personnel to get in touch with

the individual schools. One of the functions assigned to the Field Adviser should have been to maintain a liaison with the government and the schools, get feedback from the institutions and report back to the N.C.E.R.T. about problems faced. The N.C.E.R.T. should also be interested in the institutionalisation of worthwhile innovations rather than in just introducing the concepts to schools.

The State Councils of Educational Research and Training had played the role of a conduit between the N.C.E.R.T. and the Schools. It organised workshops in collaboration with the N.C.E.R.T. It generally selected the participants in such workshops. It also conducted short selected courses for teachers at regional levels. The SCERT was under the direct control of the Director of School Education. It had no faculty of its own and the faculty were assigned mainly by the School directorate and to a smaller extent by the College directorate. These assignments were for indefinite periods ranging from a few months to several years. Most of the faculty had no research qualification or research experience. The SCERT participated in change by (1) making institutions aware of innovations (2) selecting persons for getting to know about the innovations and (3) providing training to the teachers mostly with the help of NCERT. The SCERT conducted a workshop on innovation practices to pool together the innovative practices in vogue and disseminate information about them to other schools. The SCERT depended to a large extent on the local officers of the department - Chief Educational Officer and the District Educational

Officer - in its job. It had very limited funds at its disposal to give to schools trying out innovative projects and its trained personnel were inadequate to provide guidance to schools and undertake the monitoring function. The role of SCERT in the process of change was therefore found to be minimal and ineffective.

The third research body was the S.I.T.U. Council of Educational Research. It was a purely voluntary body founded by the oldest Teachers' Organisation in Asia, namely, the South Indian Teachers' Union. However the SITUCER had its existence as a separate entity and was wholly autonomous. It published a periodical 'Experiments in Education' which highlighted innovative projects in practice. It was supported by subscription raised from members, grants for specific projects received from N.C.E.R.T. and other bodies, donations from well-wishers and contribution from the World Confederation of the Organisations of Teaching Profession (WCOTP). It organised monthly seminar readings when papers presented by members were critically examined. It took up studies to evaluate the on-going projects and schemes promoted by schools and the government. It is significant that the person who initiated the Union to sponsor SITUCER took up projects was the first Director of DEPSE, the forerunner of NCERT and was also the Vice President of WCOTP. The SITUCER took up projects for implementation in schools with the assistance of NCERT and other agencies. Most of the projects were confined to a few schools in view of inadequacy of financial support. The innovation 'Library Centred Teaching' taken up for study by the

investigation was the first innovation tried by the SITUCER on a large scale. The innovation was introduced in 25 schools, selected for the Project and a few more schools joined the project of their own accord without receiving any financial assistance. The innovation was successfully adopted in all schools and the SITUCER gave the schools technical, administrative and financial assistance to introduce the innovation. When the experimental stage of the project was over, the financial assistance was withdrawn by the N.C.E.R.T. and consequently reduced to a minimum by the SITUCER. Still, the innovation was continued in schools with great enthusiasm. Resistance was totally absent and a new dimension in teaching-learning syndrome was evidenced. The discontinuance of the innovation was attributed to factors external to the agencies introducing the innovation and adopting the innovation, namely, non-availability of supplemental reading materials in the regional languages consequent to radical updating of school curricula. Still, seven schools reported continuance of the innovation. Emotional attachment to research wing of their own union, the unfailing assistance given by the SITUCER - and the rapport SITUCER maintained with <sup>the</sup> teachers and headmasters developed a strong commitment to the innovation.

Headmaster:

"The role of a headmaster is not like that of a prime minister, who is elected and open to public criticism, nor of a company director, who rarely orders or disciplines workers directly, nor of a foreman, who is in continual direct contact with the workers in the working situation" (Chanan and Gilchrist, 1974). The headmaster is at the pivot of school administration and several studies have pointed out the crucial role played by the headmaster in innovation and change (Pillay, 1972, Kamala Rai, 1972, Bhagia, 1974, Doctor, 1974, Bhikubai Patel, 1977, S. Purushothaman, 1978, P.S. Balasubramanian, 1978, Sathyavathi, 1980). An analysis of the ten case studies conducted by the investigator shows the headmaster playing multiple roles in the drama of change as informer, change agent, opinion leader and innovator. The headmaster was identified as the prime source by most teachers from whom they got to know the idea with regard to five innovations. With regard to the other five innovations, the headmaster was reported to be one of the sources who passed on the idea to them by a sizeable number of respondents. The headmaster may therefore be seen as a source from whom teachers got the idea.

Table 6.20 presents information about the orientation programmes attended by the headmasters and teachers.

**TABLE 6.20 : PARTICULARS OF PARTICIPATION OF INSERVICE AND OTHER PROGRAMMES BY HEADMASTERS AND TEACHERS.**

| S.No. | Programme                                     | No. of respondents participating |            |          |            |
|-------|-----------------------------------------------|----------------------------------|------------|----------|------------|
|       |                                               | Headmasters                      | Percentage | Teachers | Percentage |
| 1.    | Attended inservice programmes voluntarily     | 115                              | 82.0%      | 29       | 2.3%       |
| 2.    | Attended professional conferences voluntarily | 78                               | 55.9%      | 197      | 15.6%      |
| 3.    | Contributed articles to journals              | 9                                | 6.4%       | 4        | 0.3%       |
| 4.    | Presented radio programmes                    | 24                               | 17.0%      | 5        | 0.4%       |
| 5.    | Attended only official inservice programmes   | 25                               | 18.0%      | 878      | 69.7%      |

**NOTE:** Percentage has been struck to the total of 140 for headmaster-respondents and to the total of 1260 for teacher-respondents.

From Table 6.20, it may be seen that while 100% of the headmasters had participated in seminars, orientation programmes and others in-service programmes, only 69.7% of the teachers had attended in-service programmes. While 82% of the headmasters had attended in-service programmes and professional conferences voluntarily, only 2.3% of the teachers had attended programmes voluntarily. While 17% of the headmasters had presented radio programmes, only five teachers were reported to have

presented radio programmes. The range of professional conferences attended by the respondents included the annual and special meetings of the Association of English Language Teachers, Association of Mathematics Teachers, Science Masters' Association, Indian Association of Programmed Learning and Educational Technology and Craft Teachers' Association. The level at which these programmes were held ranged from the local town or district to national level. Two headmasters had reported that they had attended the World Education Fellowship at international level. The foregoing data point out the greater exposure of the headmasters to new ideas than the teachers. Out of 175 innovations identified by the headmasters in Table 6.16, 93 were reported to be headmasters and 62 were teachers. The number of early adopters reported were 543, of whom 11 were reported to be headmasters. As 104 headmasters had alone furnished the figures, it could be seen that over 89% of the headmasters considered themselves as innovators and 11% of the teachers as early adopters. This is in conformity with the finding of Cohen in his study of the conceptions of head teachers concerning their role that headmasters tended to see themselves as more innovatory and educationally progressive than their assistants (Musgrove, 1971). The headmaster was identified as their change agent by most of the respondents with regard to two other innovations, <sup>and</sup> the headmaster's influence as a change agent was seen by a few. Similarly the headmaster was identified as an opinion leader by 14% of the respondents. Another finding from an analysis of Personal Data form was that head teachers over 50 years of age were greatly involved <sup>in</sup> to change. Though this is

supported by another finding of Cohen (Musgrove, 1971) that head teachers over 50 years of age were more inclined than younger heads to favour change, it should be pointed out that headmasters under 50 years were very few in number and that a comparison was not legitimate.

Though over 93 out of 104 headmasters had considered themselves as innovators, only 17 headmasters had initiated any of the ten ~~innovators~~<sup>innovations</sup> on their own accord. 26 innovative practices other than the ten investigated in the present study had been reported in one or other of the 140 schools. The following reasons were given for the headmasters for not introducing innovations: (1) The headmasters had too much of administrative work and had little time to attend to academic work. Most of their time was devoted to answering letters from department, furnishing statistical and other returns. This corresponds with the findings of (i) Gross and Herriott (Musgrove, 1971) that a majority of school principals felt that they spent too much time on 'managing the school office' and attending to burdensome tasks such as taking inventories and preparing reports for higher authorities and (ii) Bernbaum (Eggleston, 1976) that headmasters tended to define themselves as overworked and especially overburdened by the returns made necessary to the educational authorities and the Department of Education and Science. This self perception of Headmasters had to be studied in-depth by a time study to find out the actual time spent by headmasters on different functional responsibilities to be performed by them.

Another reason for the headmasters not initiating innovations in their schools was the conservatism exhibited by most of them. They desired just to carry on the administration without inviting trouble from inside or notice from outside. The headmasters gave the following additional reasons for not initiating change in their schools: (1) oversized classes (2) heavy workload of teachers (3) inadequate financial support (4) lack of appreciation for good work (5) unsympathetic attitude of bureaucracy (6) preoccupation with results in school final examinations (7) teachers coming to school from long distances and (8) unionism among teachers.

Two important roles of the headmasters had been identified by Feyereisen et al (1970) first as a decision utiliser and second as a decision maker. On an analysis of the case-studies it is found that the headmasters had played both these roles to a considerable extent. Being in a key position where they acted as a link between external agencies like the Department of Education, The N.C.E.R.T. etc., and the schools, they had not only the opportunity but often the responsibility of implementing decisions taken by the external agencies. Thus they performed the role of decision utilisers. Decisions were of two categories (1) decisions arrived at by the government which were to be implemented compulsorily by the headmasters with no option left for themselves (2) decisions whose implementation was left to the discretion of the headmasters. In the first category of decisions fell the innovations - Higher Secondary Education,

Modern Mathematics, Centre for Continuing Education, Physical Education Evaluation Programme, College Complex, Internal Assessment Schemes and Staff Incentive Schemes. In the second category were included the innovations - Objective based Evaluation, Work Experience and Library Centred Teaching. Out of the seven compulsorily implemented innovations, only four were continued, one partly continued but likely to be discontinued and two were discontinued. It is significant that the enforcing authority continued to be interested in the continuance of the four innovations in existence, while the authority that forced the decision on schools to introduce the change became uninterested or indifferent or lukewarm to the innovation. The headmaster had to play the role of a decision maker - to decide whether to continue or discontinuance of modify the innovation. With regard to the three innovations where the agency promoting the innovation did not exercise any compulsion or had no authority to compel, the headmasters were not only decision utilisers, but decision makers too. Of the three such innovations, one was continued, another partly discontinued but due to factors other than the school or the headmaster or the teachers and the third one discontinued in all but two schools. The headmasters were exposed to the innovation by the change agents and the decision to utilise the ideas and put them into practice was that of the headmaster. In taking the decision the headmasters were influenced by the halo effect of the change agent to a large extent. The discontinuance of the innovation was decided upon by the headmaster. The process of decision making on the part of the headmasters followed a set pattern. A mental

try out of the innovation with an analysis of its utility, the process of implementation, the degree of resistance expected and the personnel resisting, etc., was gone through by the headmasters. A discussion with staff generally followed the decision and did not precede the decision. It may therefore be said that involvement of staff in decision making was absent. The reasons adduced for non-involvement of staff was the existence of a hierarchial system where decisions of a superior (Headmaster) were accepted by the subordinates (teachers). This lack of getting the concurrence and commitment of teachers to an innovation led to the discontinuance of the innovation on the particular headmaster leaving the school on transfer or retirement or <sup>resignation</sup> registration. With regard to partially continued and partially discontinued innovations, all the schools which continued the innovation had seen no change in headmasters, while schools discontinuing the innovation had seen at least one change of headmaster.

Only 29 out of 140 headmasters were identified by the inspecting officers as highly innovative headmasters. These headmasters had introduced at least four innovations in the course of a decade. A study of these highly innovative headmasters revealed the following characteristics: (1) extensive reading habit (2) attending conferences and seminars (3) reading books and journals on education (4) conducting staff meetings regularly (5) informing teachers of new ideas (6) a kind of aloofness from teachers (7) efficient office administration and (8) task oriented approach. This conforms to the findings of Miller

(Morrish, 1976) that the influence of the headmaster on the adoption of change increased with the frequency with which he was seen engaged in proffering constructive suggestions to the members of his staff, bringing educational literature to their attention, discussing with them their personal and professional problems and displaying that he knew precisely what was happening in the classroom.

The headmasters generally confined themselves to their own institutions and rarely disseminated the ideas to other schools. The reasons given out by the headmasters were: (1) they would not like to show off (2) their ideas might not suit the other institutions (3) they would not like to poke their nose unnecessarily into others and (4) they themselves had learnt about the innovation from some other agency. This reluctance on the part of headmasters hampered dissemination of worthwhile innovations. A forum has to be established where innovative practices are collected and information spread about the innovation.

#### Teachers:

In his valuable sociological analysis of the teachers' role, B.R. Wilson (Morrish, 1972) makes one of the most telling points about the teaching profession. Doctors and lawyers are dealing in their social functions, with the abnormal and the anomic, with those critical issues in people's lives when they are desperately in need of the help of the experts. The teacher on the other hand is concerned with a compulsory social service to all the members of the public, which is taken for granted as a normal process in the lives of all children and adolescents. Teacher's failure is

more noticed than his success. This probably is the reason for the subdued role the teacher plays in the drama of change in which he is a main character.

The teacher had been reported to be a source of change with regard to only one of the ten innovations studied by the investigator. That innovation was work experience and the craft teacher of a school was reported to be one of the sources of change. Teacher-initiated changes had not been reported in most of the <sup>studies</sup> students of innovation and change in Tamil Nadu. The teacher had also not taken the role of a change agent in any of the ten innovations. The teacher had been reported as an opinion leader, but as an opinion leader he had not played any decisive role for implementation or rejection of any innovation.

The passive role of the teacher was investigated to find out why the teacher had chosen to remain on the side lines and seldom in the centre of the court or in the lime light. Some of the reasons stated by the teachers were: (1) The teachers were never consulted in any change be it at micro level or macro level. Innovations were imposed on them. They were used and not recognised. They were always kept at the receiving end. This conception of teachers about their non-involvement in decision-making is supported by several studies, like (i) Australian Capital Territories study of innovations (Nicholos, 1979) which states that innovations were often imposed on teachers without introduction discussion or participation and freedom for teachers to think and act and (ii) Keele Integrated Studies Project (M.D.Shipman, 1979)

WHICH reports that teachers had a feeling that they were always used to implement the ideas of authorities and seldom recognised as participants in change and that teachers were always dictated to and were never asked of their genuine, valid experiences

(2) Teachers complained that they were not sufficiently well-informed about the innovations. They did not also know where to go to collect further information. They were aggravated about their lack of proper understanding of the innovation and absence of any assistance from authorities. This is again supported by other studies (Nicholas, 1979, Gross et al, 1971, Nichols and Nichols, 1975). (3) There was no training given to the teachers or the training given to them was inadequate. The teachers felt that the innovations failed because they (the users) did not understand the innovation and they were not trained. (4) Teachers were depressed by feelings of their own powerlessness to deal with their problems. This is supported by a finding of Rasmussen and Bank (Culver and Hoban, 1973). (5) Teachers were reluctant to discuss their problems and thought they could go on without changing. Policies may come and go, but no one else (than a teacher) knows what happens once the teacher closes the classroom doors" (King, 1973). (6) There was a lack of motivation for the teachers to expend time and effort required to implant an innovation. This is supported by the findings of Neal Gross et al (1971). (7) When any innovation was introduced, there were initially some practical problems. If the teachers gave expression to the problems, they were taken to be resisters and opposed to change. This again is supported by Neal Gross et al (1971). (8) Teachers opined that they often saw

an innovation as a threat to their own standing and expertise.

(9) Teachers ~~were~~ too keen to maintain a kind of privacy and they were reluctant to observe other teachers and allow other teachers to observe them in their classes. This is in conformity with the finding of von Hentig (Husen, 1979) who found that teachers were unwilling to visit classes and be visited by other teachers as well as that of Rasmussen and Bank (Culver and Hoban, 1973).

(10) Fear of loss of personal status and prestige. This is supported by Markland (Husen, 1979) who infers that the more the status of the teacher would be adversely affected by the reform, the more negative his attitude would be to the reform. Another finding of Markland that the less the teacher knew about change if the change affected his status was not confirmed by this study.

The teachers of schools had not shown any resistance to six of the innovations - Higher Secondary Education, Modern Mathematics, College Complex Scheme, Physical Education Evaluation Programme, Work Experience and Library Centred Teaching. It is significant that with regard to three of these innovations, the teachers were given intensive in-service or orientation courses. The school teachers showed resistance to a small degree to two innovations - the Centre for Continuing Education and Staff Incentive Schemes. Two innovations - Objective based Evaluation and the Internal Assessment Scheme, were resisted by most of the teachers and both the innovations had been discontinued in all but two schools. The college teachers showed some resistance to two innovations - Higher Secondary Education and College Complex Scheme.

Mostly, the teachers exhibited their resistance indirectly and resisted only part of the innovation. Teacher's reluctance to show direct opposition was due to their awareness of their power not to implement the change. This is in conformity with the finding of Cobb and Elden (King, 1977) that teachers were conscious of their power to insure or defeat the successful implementation of a change by complying or not complying with the behavioural prescription. Teachers' resistance did not lead to any breakdown of the order in schools and often resulted in the discontinuance or modification of the innovation. There were two cases where teachers' objections were brushed aside by the headmaster who proceeded with the innovation.

#### Teachers' Organisations:

While, as aforesaid, the teachers had played a subordinate passive role in change and had exhibited a considerable amount of weakness in accepting change, the teachers' unions and professional organisations had shown commendable leadership and <sup>courage</sup> ~~convége~~ in proposing as well as opposing change. Though individually teachers submitted to changes, they left it to their unions to speak on their behalf and get things done.

Even though there were over sixty registered teachers' unions and professional organisations in Tamil Nadu, only a few of them were active and participated in decision making. The other organisations catered mainly to narrow sectoral interests.

The important organisations were the South Indian Teachers' Union, Tamil Nadu Graduate Teachers' Association, Association of University Teachers and the Tamil Nadu Primary School Teachers' Federation.

The South Indian Teachers' Union renamed as the Tamil Nadu Asiriar Kazhagam was the oldest teachers' organisation in Asia, founded by eminent educationists. It had the twin objective of fighting for basic teachers' rights and privileges and proposing academic reforms. It created an academic wing, South Indian Teachers' Union Council of Educational Research to attend to propose some of the important changes. The Union organised a large number of workshops in the wake of the publication of the Kothari Commission Report (1966) and brought pressure on the government to accept the salient recommendations of the Commission. The Union also asked the government to update the school curricula, failing which the union proclaimed its intention of framing a curricula of its own and submitting the same to the government. The government accepted the proposals of the South India Teachers' Union with regard to the pattern of education and the updating of syllabuses. The Union lobbied successfully for the location of the plus two stage in schools. The Union also proposed to the Government to give representation to the teachers' unions on syllabus committees and the government accepted the proposal and for the first time, the teachers' Unions were officially asked to nominate their representatives on the syllabus committees. The S.I.T.U. became dormant with the coming of sectional teachers' organisations and the representation of the teachers' unions on the Syllabus Committee was not continued. The work of the S.I.T.U.C.E.R.

the academic wing of the S.I.T.U. had already been discussed.

The teachers' union that had recently emerged as a strong force was the Graduate Teachers' Association, since rechristened as the Tamil Nadu Graduate and Post Graduate Teachers' Association. The Association had recently been officially recognised as one of the two teachers' unions and had its representatives on the Boards of Education. The Association had confined mostly its activities to betterment of economic status and service conditions of teachers. Its nominees were on the syllabus committees. The Association had not played any negative role in the implementation of innovation though headmasters reported militancy on the part of the members as a cause for non-introduction of change.

The Association of University Teachers (AUT) and its allies, Association of Government College Teachers and the Madurai University Teachers' Association (MUTA) had played some role with regard to two of the innovations - Higher Secondary Education and the College Complex Scheme. Due to the closure of the Pre-University courses, it was feared that a large number of college teachers would be rendered jobless and further the removal of the pre-degree course from the college was considered as an affront to their status and prestige. Hence the AUT opposed these two innovations connected with plus two system. The opposition was met by the governmental proposal guaranteeing job protection for all college teachers rendered surplus consequent to the closure of PUC and by a reiteration of the resolve of the government that there was no going back on the location of plus two in schools.

The role of professional organisations in change was worthy of note. The Association of Mathematics Teachers of India played an important role in the upgrading of syllabus, especially the introduction of Modern Mathematics. Four of its members served on the syllabus committee, one of them as chairman. The Association also helped the government to publish textbooks in modern mathematics. Further through its official publication 'The Mathematics Teacher', it made teachers aware of the latest trends in Mathematics Education in India and abroad. It associated itself actively with the massive orientation programmes in Mathematics by providing master educators, in which over a lakh of teachers were given training in the content and methodology of Modern Mathematics.

Similarly the Physical Education Association had lent a supporting role in the implementation of the innovation, namely, the Physical Education Evaluation Programme.

Minor Characters:

There are three other characters in the drama of change, the parents, the students and the employers. Though Parent Teachers' Association had been officially sponsored to exist in all the primary, middle and secondary schools all over Tamil Nadu, with an apex body at state level, it had not played any role with regard to change, though some of the departmentally organised programmes had been funded by the PTA. No P.T.A. had an elected body and all the office bearers were nominated by the authorities. Parents, in their individual capacity had shown resistance to the innovation, Modern Mathematics. It was an

influential elitist minority group but its proximity to decision making authorities was able to succeed in shelving the teaching of modern mathematics from I Std. to VIII.Std. It is significant that the student community which had been most affected by educational change had shown no direct or indirect resistance to change, though the decade under study was one of campus turbulence and the causes for which the students agitated were totally not related to schools and education. Though this is a bemusing factor, the same kind of student protests were seen elsewhere, like U.S. students protesting on account of Vietnam War. The employers had displayed no interest in educational change except with regard to two innovations - Higher Secondary Education and the Staff Incentive Scheme. Their interest with regard to the former was limited to getting their schools upgraded, while the employers promoted the later innovation. The decade of 70's in Tamil Nadu saw a change in the attitude of managements of schools and most of them had chosen to play a subdued role.

An analysis of the part played by the various characters on the stage of innovation leads to the following findings:

Role of Elected Politicians:

1. Educational questions seldom emerge as major political issue.
2. Teacher-legislators in Tamil Nadu are mostly non-politicians.
3. Acceptance of status quo and the reluctance to suggest radical change are notable in legislative debates.
4. Among the politicians the Minister for Education alone plays a dominant role in educational change.

5. The Minister for Education lends political, administrative and financial support to change, enabling the successful implementation of an innovation.

Education Officials:

1. The Director of School Education initiates change on massive scale.
2. The Director of School Education lends administrative and to a lesser account financial support to innovations sponsored by him.
3. The Director of School Education arranges for training of the client system with regard to changes associated with him.
4. The life of the innovation sponsored by a Director of School Education is generally coterminus with his incumbency of the office.
5. A Director of School Education succeeding another does not generally evince interest in the sustenance of the innovation introduced by his predecessor.
6. The inspecting officers discharge the function of dissemination of innovations.

Research Agencies:

1. Three research agencies that are connected with educational change in Tamil Nadu are the National Council of Educational Research and Training, the State Council of Educational Research and Training and the South Indian Teachers' Union Council of Educational Research.

2. The Research agencies have been the source of innovations.
3. The reasearch agencies have acted as change agents for the innovations they have sponsored.
4. The N.C.E.R.T. performs the following tasks with regard to the innovations sponsored by it. (i) innovating (ii) engineering (iii) informing. Sometimes it builds conviction also and generally leaves the next three stages (i) testing (ii) operationalising and (iii) establishing to the schools.
5. The N.C.E.R.T. provides training for the clients by experts, but it does not generally give any assistance to practising schools in the course of adoption of innovations, except for projects financed by it.
6. The N.C.E.R.T. generally influences the individual Directors of School Education.
7. The S.C.E.R.T. plays the role of conduit between N.C.E.R.T. and the schools.
8. The S.C.E.R.T. suffers from want of qualified technical personnel and adequate finance.
9. The S.C.E.R.T. undertakes the following functions (i) informing schools of innovation (ii) selecting schools for adoption and (iii) training personnel with the help of N.C.E.R.T. and other bodies.
10. The SITUCER takes up innovative projects by itself or with grants from NCERT and other bodies.

11. The SITUCER maintains close liaison with schools introducing change, monitors their functioning and provides continuous assistance.

Headmasters:

1. The headmaster is the main source for teachers for becoming aware of innovations.
2. Headmasters are exposed to new ideas much more than the teachers.
3. Headmasters tend to see themselves as more innovatory and educationally progressive than the teachers.
4. Headmasters do not generally initiate innovations for the following reasons: (i) heavy administrative work (ii) over work (iii) conservatism (iv) oversized classes (v) heavy workload for teachers (vi) inadequate financial support (vii) lack of appreciation (viii) unsympathetic bureaucracy (ix) preoccupation with public examination results (x) resistance from teachers.
5. Headmasters perform the dual role of decision utiliser or decision implementer and decision maker.
6. Headmasters make a mental tryout before taking a decision to adopt an innovation.
7. Headmasters involve teachers at adoption stage only and not at decision stage.
8. Highly innovative headmasters have the following characteristics. (i) extensive reading (ii) attending conferences

and seminars (iii) conducting staff meetings regularly  
(iv) informing teachers of new ideas (v) efficient office  
administration and (vi) task oriented approach.

9. Headmasters do not generally disseminate the innovation to the schools for the following reasons: (i) dislike to show off (ii) the idea may not suit other schools (iii) why poke my nose unnecessarily? (iv) It is not my idea.

Teachers:

1. Teachers do not generally initiate change nor are they the source of innovations.
2. Teachers adopt a passive role for the following reasons:  
(i) Teachers are not consulted in any change (ii) They are not sufficiently well-informed (iii) They are either not given any training or given insufficient training  
(iv) Teachers are depressed by their powerlessness to deal with their problems (v) They lack motivation  
(vi) Teachers are not helped to tackle initial problems  
(vii) Teachers see innovation as a threat to their own status and expertise (viii) Teachers are secretive.
3. Innovations resisted by most of the teachers are discontinued.
4. Teachers' resistance does not generally affect the school tone.

Teachers' Organisations:

1. Teachers' Organisations generally do not oppose innovations and change.
2. Teachers' Organisations sometimes propose changes and act as catalysts.
3. Teachers unions oppose changes which lead to loss of jobs or loss of prestige.
4. Professional associations play a key role in proposing and implementing change.

Minor characters:

1. Parent Teachers' Associations do not take part in change process.
2. Opposition to innovations come from parents in their individual capacities, that too mostly from influential parents from elite class.
3. Students do not oppose innovations in education.
4. Employees are interested only in innovations likely to bring prestige and status to their institution.

6. TIME DIMENSION OF CHANGE:

Time is an important consideration in the process of diffusion. From the time of conception of an idea to its adoption and later discontinuance if the case be, distinct stages had been identified in the earlier paragraphs. It is proposed to find out what time an idea took for its travel from one point to another and whether the time lag had any relation to its successful adoption or discontinuance.

6.1 : TIME OF CONCEPTION OF INNOVATIONS:

Several studies have been undertaken in technological and scientific areas to identify the time of conception of an idea and the time taken for its application. Such studies are lacking in social science areas and especially education. Orlosky and Smith (Phi Delta Kappan, March 1972) had made a study of this aspect with regard to fifty innovations. In the present investigation, the time of conception was taken as the time when the innovation was published in printed form. Table 6.21 gives details of the innovations, their time of conception and the earliest publication associated with the innovation, as could be identified through a study of the literature about the innovation.

TABLE 6.21 : TABLE SHOWING TIME OF CONCEPTION OF INNOVATIONS.

| S. No. | Innovation                               | Time of Conception | Associated Publication of Events |
|--------|------------------------------------------|--------------------|----------------------------------|
| 1.     | Higher Secondary Education               | 1966               | Kothari Commission               |
| 2.     | Modern Mathematics                       | 1960               | SMSG Texts, U.S.A.               |
| 3.     | Objective based Evaluation               | 1956               | Bloom's Taxonomy                 |
| 4.     | Centre of Continuing Education           | 1968               | Schools Council, U.K.            |
| 5.     | College Complex                          | 1966               | Kothari Commission               |
| 6.     | Physical Education Evaluation Programmes | 1962               | HEW Dept., U.S.A.                |
| 7.     | Internal Assessment Scheme               | 1969               | N.C.E.R.T. Booklet               |
| 8.     | Work Experience                          | 1966               | Kothari Commission               |
| 9.     | Library Centred Teaching                 | 1968               | Project design of SITUCER        |
| 10.    | Staff Incentive Scheme                   | 1950               | --                               |

It is significant that the Report of the Education Commission, 1964-66 had given birth to three concepts. Much earlier sources for their innovations could be traced, but the investigator wanted to identify an innovation with an important landmark. With regard to Physical Education Evaluation Programme, officially called Compulsory Physical Education Scheme, it was not possible to identify the year of conception, since the concept was as old as education system if the innovation was considered just as compulsory attendance at physical education classes. The time of conceptualisation of evaluation in physical education of psychomotor skills <sup>when standards</sup> were prescribed by the special committee appointed by the Department of Health, Education and Welfare, United States. Similarly, though a number of earlier sources could be identified with regard to the individual components of the Comprehensive Internal Assessment Scheme, its date was fixed as 1969 when the N.C.E.R.T. published a guide to the comprehensive Internal Assessment Scheme, taking an overall view of the various aspects of personality development. Modern mathematics as a worldwide phenomenon was closely associated with the revolutionary change in their school curricula in U.S.A. with the publication of the MSG Texts. Benjamin Bloom's Taxonomy of Educational Objectives was the foundation for modern evaluation and hence the publication of its first edition was taken as the point of time of conceptualisation of the innovation 'Objective based Evaluation'. Similarly, the publication of the pamphlet by the Schools Council, United Kingdom detailing the concept of Teachers' Centres was considered as the basic manual for the 'Centre of Continuing Education'. Since the concept of Staff Incentive Schemes

was borrowed from industry and since the concept is over half a century old, no fixed data could be identified for the Staff Incentive Scheme. An arbitrary date as 1950 was fixed for the innovation for purposes of this study. Since no earlier source for Library Centred Teaching was traceable, its date was fixed at the date on which the project was submitted by the SITUCER to the NCERT.

## 6.2 : TIME OF KNOWLEDGE FUNCTION:

When did the practitioners become aware of the innovation? Different points of time were mentioned by the persons interviewed. The PERT formula for time estimate  $\frac{a + 4m + b}{6}$ , where 'a' is the earliest time, 'b' is the latest time and 'm' is the mean time was adopted. Table 6.22 gives the time estimate of awareness of the innovation.

TABLE 6.22 : TABLE SHOWING TIME OF AWARENESS OF INNOVATION.

| S. No. | Innovation                              | Time estimate of awareness of Innovation | Time lag between conception and awareness |
|--------|-----------------------------------------|------------------------------------------|-------------------------------------------|
| 1.     | Higher Secondary Education              | 1975                                     | 9 years                                   |
| 2.     | Modern Mathematics                      | 1968                                     | 8 years                                   |
| 3.     | Objective based Evaluation              | 1973                                     | 17 years                                  |
| 4.     | Centre for Continuing Education         | 1978                                     | 10 years                                  |
| 5.     | College Complex                         | 1978                                     | 12 years                                  |
| 6.     | Physical Education Evaluation Programme | 1975                                     | 13 years                                  |
| 7.     | Internal Assessment Scheme              | 1973                                     | 4 years                                   |
| 8.     | Work Experience                         | 1970                                     | 4 years                                   |
| 9.     | Library Centred Teaching                | 1969                                     | 1 year                                    |
| 10.    | Staff Incentive Scheme                  | 1971                                     | 21 years                                  |

It is significant that the time of awareness of the innovations ranged from 1969 to 1978. This had been so because only innovations introduced in schools within a period of ten years of this study were taken up for this study. The time lag between the concept of an innovation and its awareness ranged from 1 year to 21 years. The mean of the time lags is 9.9 years and the standard deviation is 5.6 years. This is in contrast to the finding of Orlosky and Smith (Phi Delta Kappan, March 1972) that the mean time for transmission of an educational innovation from the laboratory to the classroom was about 18 years. But the innovations selected by them for investigation had been conceived before 1950. The time lag between conception of an idea and awareness of the idea ranged from 3 to 50 years, with a mean time of 18 years. Three ideas emanated from the Kothari Education Commission Report took time spans of 9 years, 12 years, and 4 years. This is evident that the practitioners had not gone through the entire report at one stroke and that the practitioners did not necessarily come to know of the innovation through <sup>the</sup> report. Actually the prime source for these innovations were the Department of Education and the headmaster.

### 6.3 Time of Persuasion Function:

After the target group becomes aware of an innovation, they gather further information about the innovation and forms a favourable attitude towards the innovation. What is the time taken for this process is studied in this section. Table 6.23 gives particulars of the time of persuasion and the time lag between time of awareness and time of conception.

TABLE 6.23 : TABLE SHOWING TIME OF PERSUASION.

| S. No. | Innovation                              | Time of Persuasion | Time lags between awareness and persuasion |
|--------|-----------------------------------------|--------------------|--------------------------------------------|
| 1.     | Higher Secondary Education              | 1975               | 0 year                                     |
| 2.     | Modern Mathematics.                     | 1968               | 0 year                                     |
| 3.     | Objective based Evaluation.             | 1973               | 0 year                                     |
| 4.     | Centre of Continuing Education          | 1978               | 0 year                                     |
| 5.     | College Complex                         | 1979               | 1 year                                     |
| 6.     | Physical Education Evaluation Programme | 1975               | 0 year                                     |
| 7.     | Internal Assessment Scheme              | 1973               | 0 year                                     |
| 8.     | Work Experience                         | 1970               | 0 year                                     |
| 9.     | Library Centred Training                | 1969               | 0 year                                     |
| 10.    | Staff Incentive Scheme                  | 1971               | 0 year                                     |

From Table 6.23, it is found that except for one innovation - College Complex Scheme - for which there was a time lag of 1 year between awareness and persuasion, the time of persuasion was in the same calendar year as the time of awareness and the time lag was just a few months. Three innovations - Centre for Continuing Education, Internal Assessment Scheme and Staff Incentive Scheme - showed no time lag, that is, the target group became interested as soon as they got to know the idea and got favourably disposed towards the innovation. The first two of these three innovations were introduced to the practitioner through detailed circulars or intensive training programmes and they were to be compulsorily introduced in the schools with immediate effect. The last one was conceived and implemented by the authority and the target group just benefited by the idea. With regard to the College Complex

Scheme, there was the maximum time lag of one year. This innovation was to be implemented by the schools and a good amount of ground work and contact was needed before the implementation. Coordination between several agencies was also called for. Hence the longer time lag. For the other six innovations, the actual time lag ranged from 1 to 3 months. For four of these innovations, the time lag between conception and awareness exceeded 9 years, for one innovation, it was 4 years and for the other, it was just an year. The last one - the Library Centred Teaching - was sponsored by the SITUCER and the earlier sources were not known. Therefore compared to the time lags between conception and knowledge, the time lags between knowledge and persuasion were negligible. It may therefore be surmised that the target group more or less goes through the persuasion ~~of~~ function simultaneously with the decision function and is not able to identify distinctly the persuasion stage, though they go through that stage as evidenced from their answers to the queries.

#### 6.4 : Time of Decision Function:

The final stage in the innovation decision process comes when the client system takes the decision to adopt or reject an idea. Table 6.24 gives the time of decision and the time lags between the persuasion stage and the decision stage.

TABLE 6.24 : TABLE SHOWING THE TIME OF DECISION.

| S. No. | Innovation                              | Time of decision | Time lag between persuasion and decision |
|--------|-----------------------------------------|------------------|------------------------------------------|
| 1.     | Higher Secondary Education              | 1978             | 3 years                                  |
| 2.     | Modern Mathematics                      | 1972             | 4 years                                  |
| 3.     | Objective based Evaluation              | 1973             | 0 year                                   |
| 4.     | Centre for Continuing Education         | 1979             | 1 year                                   |
| 5.     | College Complex                         | 1979             | 0 year                                   |
| 6.     | Physical Education Evaluation Programme | 1975             | 0 year                                   |
| 7.     | Internal Assessment Scheme              | 1973             | 0 year                                   |
| 8.     | Work Experience                         | 1971             | 1 year                                   |
| 9.     | Library Centred Teaching                | 1970             | 1 year                                   |
| 10.    | Staff Incentive Scheme                  | 1971             | 0 year                                   |

For five innovations, the decision to adopt was taken immediately after the persuasion stage. It is significant that for four of these five innovations, there was no time lag between the awareness and the decision stages. Two of the innovations were discontinued, one innovation was introduced with conviction and therefore continued and the other one introduced by the management. The longest time lag between persuasion and decision stages were for the innovations - Modern Mathematics and Higher Secondary Education which took almost the same time. The long time lag was due to the extensive ground work required for implementation of the innovations like syllabus framing, selection

of schools, text book preparation, drawing rules of affiliation, etc. It may therefore be seen that there was a longer time lag between persuasion and decision stages for innovations requiring sufficient ground work for their implementation and that for all other innovations, the decision to adopt was almost taken as soon as they had formed a favourable attitude towards the innovation.

TABLE 6.25 gives a summary of the Tables 6.21 to 6.24, taking the year of conception as the base year.

TABLE 6.25 : TABLE SHOWING THE TIME TAKEN FROM THE BIRTH OF AN IDEA TO ITS ADOPTION.

| S. No. | Innovation                              | Number of years from conception to the time of |            |          | Stage of Innovation.                   |
|--------|-----------------------------------------|------------------------------------------------|------------|----------|----------------------------------------|
|        |                                         | Awareness                                      | Persuasion | Decision |                                        |
| 1.     | Higher Secondary Education              | 9                                              | 9          | 12       | Institutionalised.                     |
| 2.     | Modern Mathematics                      | 8                                              | 8          | 12       | Institutionalised.                     |
| 3.     | Objective based Evaluation              | 17                                             | 17         | 17       | Discontinued                           |
| 4.     | Centre for Continuing Education         | 10                                             | 10         | 11       | Continued                              |
| 5.     | College Complex                         | 12                                             | 13         | 13       | Withering                              |
| 6.     | Physical Education Evaluation Programme | 13                                             | 13         | 13       | Discontinued                           |
| 7.     | Internal Assessment Scheme              | 4                                              | 4          | 4        | Discontinued                           |
| 8.     | Work Experience                         | 4                                              | 4          | 5        | Institutionalised.                     |
| 9.     | Library Centred Teaching                | 1                                              | 1          | 2        | <u>Discontinued</u>                    |
| 10.    | Staff Incentive Scheme                  | 21                                             | 21         | 21       | <u>Institutionalised.</u><br>Continued |
|        | Mean Times                              | 9.9                                            | 10         | 11       |                                        |

From Table 6.25, it is found that all the innovations that had been institutionalised had time lags ranging from 1 to 4 years from the time of awareness to the time of decision. It is also the case with regard to an innovation which was continued and whose institutionalisation was dependent on a permanent system of grants. Only with regard to one innovation that was continued, there was no time lag. This innovation depended on the goodwill and the bounty of the management and could be withdrawn at any time without notice and hence its chances of getting institutionalised remained uncertain. All the three innovations that had been discontinued experienced no time lag. The decisions may therefore be considered not due to conviction and rational thinking, but due to factors like authority sponsorship, initial enthusiasm, etc.,. With regard to the innovation that was on the wane, the innovation was conceived only as an interim measure to meet with certain exigencies. It may therefore be concluded that a time lag between the awareness stage and the decision stage is necessary and will ensure chances of the innovation getting institutionalised and that innovations where the process of decision is not gone through over a length of time have a greater probability to fail.

The above discussion leads to the following generalisations with regard to the time dimensions.

1. The time lag between the time of conception of an idea and its being known to a target groups ranges from 1 to 21 years, with a mean time of 9.9 years.
2. There is a big time gap between the publication of reports and the awareness of the innovations suggested by the report.

3. The stage of persuasion is not distinctly visible and the target group more or less goes through that stage simultaneously with the next stage, namely, the decision stage.
4. Innovations needing ground work take a longer time at the decision stage.
5. The time lag between the awareness stage and the decision stage is a significant factor in the institutionalisation or continuation of an innovation.

7. MODELS OF CHANGE AND STRATEGIES EMPLOYED:

In this section, the models of change adopted, the types of innovation decisions and the types of strategies employed will be discussed. Table 6.26 summarises these details with regard to the ten innovations investigated.

TABLE 6.26 : TABLE FURNISHING DETAILS OF MODELS OF CHANGE, TYPES OF DECISIONS AND TYPES OF STRATEGIES EMPLOYED IN THE IMPLEMENTATION OF INNOVATIONS.

| S.No. | Innovation                              | Model of Change | Type of Innovation Decision | Type of strategies |
|-------|-----------------------------------------|-----------------|-----------------------------|--------------------|
| 1.    | Higher Secondary Education              | RDD             | A                           | A                  |
| 2.    | Modern Mathematics                      | RDD             | A                           | A,P,D,V            |
| 3.    | Objective based Innovation              | RDD             | A C                         | V,R                |
| 4.    | Centre of Continuing Education          | PS              | A                           | A,V,E              |
| 5.    | College Complex                         | PS              | A                           | A,D,E              |
| 6.    | Physical Education Evaluation Programme | RDD             | A                           | A,V,P              |
| 7.    | Internal Assessment Scheme              | RDD             | A                           | A,V,R,D            |
| 8.    | Work Experience                         | PS              | A C                         | V,R,D,A,E,P        |
| 9.    | Library Centred Training                | PS              | C                           | V,D,R              |
| 10.   | Staff Incentive Scheme                  | PS              | A                           | A,E,P              |

Model of change : RDD : Research, Development and Diffusion  
PS : Problem Solving

Type of Innovation Decision: A : Authority : C : Collective

Type of Strategy : A : Authority : V : Value

P : Psychological

D : Didactic; E : Economic

R : Rational

Wherever more than one type of decision or one type of strategy was employed, the dominant type used is given as the first one.

From Table 6.26, it is found that Research, Development, and diffusion model had been adopted for five innovations and the problem solving model was adopted for the other five innovations. The Social Interaction model had not been adopted for any of the innovations. After studying twenty five innovative institutions, S.Purushothaman (1978) concludes that the models adopted generally were the problem solving and the Social interaction while P.S.Balasubramaniam (1978) finds that the common models of change adopted by schools were Research, Development and Diffusion Model and the <sup>Social</sup> School interaction model. Of the five innovations adopting R.D.D. model, three had been discontinued and only two were continued both of which were government sponsored innovations. Of the five innovations adopting the Problem solving model, three were continued in all schools, while one was continued in some schools and discontinued in other schools due to reasons beyond the control of the schools and teachers. The other innovation was in the wane, as it was introduced as a solution to a problem of a temporary nature. Hence it may be seen that the innovations adopting the problem solving model were sustained and continued much more than

the innovations adopting the R.D.D. model. A study of the three innovations adopting RDD model discontinued shows that the change agent followed the first three steps only in the scheme of change process, namely, producing the innovation, engineering and packaging the innovation and informing about the innovation and to a slight extent, building conviction about the innovation, but failed to go through the crucial final steps, namely, trying out the innovation in a situational context, operationalising the innovation for use and establishing the innovation as a part of an on-going programme, i.e., converting it into a 'non-innovation'. The innovations were discontinued because the sustaining steps were avoided. The institutionalisation of the two innovations adopting RDD model - Higher Secondary Education and Modern Mathematics - conforms to the finding of Morrish (1976) that the R.D.D. Model was most suited to planning of change on a large scale.

With regard to the types of innovation decisions taken, collective decision was made with regard to only one innovation, the Library Centred Teaching, though collective decision was combined with authority decision with regard to two other innovation Objective based Innovation and Work Experience. It may be noted that all these three innovations were optional in character with no governmental or departmental directive though with regard to the last two, the department was an interested party to the innovations. All the other seven innovat<sup>low</sup>ers were purely authority innovation decisions. It is therefore seen that authority innovativ

decision is the common type made use of in school system. This is supported by the finding of S.Purushothaman (1978) that the authority decides the innovative practices for adoption.

Table 6.27 gives the details of the number of innovations which employed particular strategies as a dominant strategy or as a subordinate one.

TABLE 6.27 : TYPES OF STRATEGIES EMPLOYED.

| S.<br>No. | Type of Strategy | No. of innovations employing<br>the strategy as the |                    |       |
|-----------|------------------|-----------------------------------------------------|--------------------|-------|
|           |                  | Dominant<br>one                                     | Subordinate<br>one | Total |
| 1.        | Authority        | 7                                                   | 4                  | 8     |
| 2.        | Value            | 3                                                   | 4                  | 7     |
| 3.        | Didactic         | -                                                   | 5                  | 5     |
| 4.        | Rational         | -                                                   | 4                  | 4     |
| 5.        | Economic         | -                                                   | 4                  | 4     |
| 6.        | Psychological    | -                                                   | 4                  | 4     |

With regard to the types of strategies employed, the authority strategy was dominantly employed with regard to seven innovations and the value strategy was employed with regard to the other three. It is significant that value strategy was employed for the same innovations as were collective decisions. Only two innovations - Objective based Evaluation and Library Centred Teaching had not at all seen the employment of authority strategy. The rational strategy was always employed along with value strategy and didactic

strategy was employed along with value strategy for four out of five innovations. All the six strategies were reported to have been employed with regard to the innovator<sup>Dom</sup>, Work Experience. These findings are partly supported by S.Purushothaman (1978) who found that power-coercive and authoritative approach were commonly employed and CERI studies (1971) which reported that power-coercive strategy and economic strategy were adopted for central authority decisions.

From the above discussion the following generalisations are made:

1. The Research, Development and Diffusion model and the problem solving model are adopted as models of change.
2. The innovations adopting the problem solving model are likely to be sustained and continued.
3. The innovations adopting Research, Development and Diffusion models are bound to fail if all the steps in the model are not followed.
4. Most innovation decisions are authority oriented.
5. The authority strategy is mostly employed to put an innovation into practice. Value strategy is also employed though it is preferred to collective innovative decisions.

#### 8. CHARACTERISTICS OF INNOVATION:

The practitioners were asked to evaluate the innovation on a five <sup>score</sup> point scale on each of the six characteristics of innovations, namely, Relative Advantage, Compatability, Complexity, Communicability, Divisibility and Observability. The mean scores for each of the innovation was found. Since complexity was a negative characteristic

while the other five were positive ones, non-complexity score was arrived at by deducting the complexity score from the maximum score of 5. Table 6.28 presents the scores of the six characteristics with regard to the innovations studied.

**TABLE 6.28 : TABLE SHOWING THE SCORES OF THE CHARACTERISTICS OF INNOVATIONS.**

| S.No | Innovation                              | Relative<br>Advan-<br>tage | Compat-<br>ability | Divisi-<br>bility | Observe<br>ability | Communi-<br>cability | non-<br>complex-<br>ity | Total |
|------|-----------------------------------------|----------------------------|--------------------|-------------------|--------------------|----------------------|-------------------------|-------|
| 1.   | Higher Secondary Education              | 3.8                        | 3.8                | 3.6               | 2.4                | 2.8                  | 1.9                     | 18.3  |
| 2.   | Modern Mathematics                      | 3.6                        | 1.8                | 2.6               | 2.2                | 1.8                  | 1.4                     | 13.4  |
| 3.   | Objective based Evaluation              | 3.6                        | 3.7                | 3.6               | 3.6                | 1.6                  | 0.3                     | 16.4  |
| 4.   | Centre of Continuing Education          | 4.4                        | 4.1                | 3.8               | 4.0                | 3.8                  | 3.8                     | 23.9  |
| 5.   | College Complex                         | 2.4                        | 3.6                | 3.6               | 3.8                | 3.7                  | 1.4                     | 18.5  |
| 6.   | Physical Education Evaluation Programme | 4.2                        | 4.1                | 2.6               | 3.9                | 3.6                  | 1.4                     | 19.8  |
| 7.   | Internal Assessment Scheme              | 2.0                        | 1.8                | 2.4               | 0.9                | 1.1                  | 0.6                     | 8.8   |
| 8.   | Work Experience                         | 4.2                        | 4.0                | 4.0               | 3.8                | 4.0                  | 3.7                     | 23.7  |
| 9.   | Library Centred Teaching                | 3.8                        | 4.3                | 3.8               | 3.6                | 3.8                  | 4.1                     | 23.4  |
| 10.  | Staff Incentive Scheme                  | 4.2                        | 4.1                | 3.6               | 3.8                | 3.8                  | 3.9                     | 23.4  |
|      | Mean Score                              | 3.62                       | 3.53               | 3.36              | 3.20               | 3.00                 | 2.25                    | 18.9  |

From Table 6.28, it is found that the four innovations with the highest scores, namely, the Centre for Continuing Education (23.9), Work Experience (23.7), Library Centred Teaching (23.4) and Staff Incentive Scheme (23.4) had experienced little resistance and had been continued

though the Library Centred Teaching had to be discontinued in some schools, for reasons beyond the control of the schools and teachers. It may therefore be concluded that innovations with high scores have a greater probability of being continued.

Table 6.29 shows the mean, standard deviation of the three institutionalised innovations and the three discontinued innovations.

**TABLE 6.29 : COMPARISON OF THE CHARACTERISTICS OF THE INSTITUTIONALISED INNOVATIONS AND DISCONTINUED INNOVATIONS.**

| S. No. | Characteristic     | Institutionalised Innovation |                    | Discontinued Innovation |                    | 't' score |
|--------|--------------------|------------------------------|--------------------|-------------------------|--------------------|-----------|
|        |                    | Mean                         | Standard Deviation | Mean                    | Standard Deviation |           |
| 1.     | Relative Advantage | 3.8                          | 0.25               | 3.27                    | 0.93               | 1.08      |
| 2.     | Compatability      | 3.2                          | 0.99               | 3.2                     | 1.00               | 0         |
| 3.     | Divisibility       | 3.4                          | 0.59               | 2.87                    | 0.52               | 1.17      |
| 4.     | Observability      | 2.8                          | 0.71               | 2.8                     | 1.35               | 0         |
| 5.     | Communicability    | 2.87                         | 0.90               | 2.1                     | 1.32               | 0.83      |
| 6.     | Non-complexity     | 2.33                         | 0.99               | 0.77                    | 0.46               | 2.48      |

From Table 6.29, it is found that the difference between means is not significant for the first five characteristics, while it is significant at .10 level for the factor non-complexity. This leads

to the conclusion that the greater the complexity, the less the probability of its getting institutionalised.

From the above, the following generalisations are made:

1. The innovations with high scores in the aggregate on all the six characteristics put together are more likely to be continued.
2. There is no significant difference between the means of the institutionalised and discontinued innovations on the characteristics, Relative Advantage, Compatability, Divisibility, Observability and Communicability.
3. For non-complexity, the difference between means of the institutionalised and discontinued innovation is significant at 0.1 level, i.e., the greater an innovation is complex, the less likely it is to get institutionalised.