

Chapter - V

CASE STUDIES

1. INTRODUCTION:

This chapter is exclusively devoted for the presentation of the Case Studies of the selected innovations practised in the State of Tamil Nadu. The rationale for adoption of case study as the method for this investigation has been explained at length in the previous chapter. It has been proposed to give in this introduction the format and the model of case studies that are to be presented.

As has already been pointed out, the distinguishing characteristic of Case Study is its emphasis on the total situation and in so doing, it describes a situation or a sequence of events leading upto some particular behaviour. Case Studies therefore imply an intensive investigation of a particular situation and such an investigation exposes a new relationship which may generally escape statistical analysis.

Keeping the above advantages of case study approach, the Case Studies are presented in such a way that not only the innovation is first explained in great length but also the strengths and weaknesses, constraints and limitations and shortcomings in the process of change are also identified and spelt out in as clear terms as possible. Such a descriptive introduction of Cases will facilitate an understanding of the change process and help to make generalisations. Any individual who likes to initiate any change may also be benefitted to select the model that would suit him as well as be beware of the resistance from the dysfunctional factors.

2. FORMAT OF THE CASE STUDIES:

Each case study begins with a synopsis of the Case Study under the following heads: (1) Name of the Innovative Practice (2) Type of Innovation (3) Number of schools practising the innovation (4) Agency introducing the innovation (5) Change agent (6) Opinion leader (7) Resisters (8) Causes of Resistance (9) Stage at which the innovation was at the time of the study (10) Process model of change (11) Type of innovative decision (12) Type of strategy adopted (13) Time lag (14) Evaluation of the Innovation (15) Size of sample selected for study.

The extensive case report is then presented in fifteen paragraphs in the following order and description. (1) Introduction (2) The content of the innovation, spelling out the conceptual basis of the innovation, the mechanics of the innovation, the sample for study and the documents studied. (3) Objectives, design and type of the innovation (4) Awareness of the innovation giving out the source of innovation, time of awareness, steps

taken to develop interest in this idea. (5) Adoption of the innovation, detailing the time of adoption, the shaping of the ideas, the mechanics of adoption, present stage of the innovation and the changes brought about in the system (6) The adopter continuum, describing the distribution of the five adopter categories namely, innovator, early adopter, early majority, late majority and laggards and the mobility of the adopter categories in the course of the adoption of the innovation. (7) The change agent and his role, identifying the change agent, his characteristics, strategies adopted and the role he played. (8) The role of opinion leadership, specifying the opinion leaders, their characteristics, and the degree of their intervention (9) Dissemination of the innovation, presenting the process of dissemination, the spread of innovation and their stages. (10) Resistance, its causes and effects, identifying the resisters, their characteristics and background, factors of resistance, the change brought about and the process of meeting the resistance. (11) Factors promoting continuance and discontinuance of the innovations, enumerating the intrinsic and extrinsic factors that fortify or weaken the innovation, the factors conducive to institutionalisation and the factors leading to discontinuance of the innovations. (12) The Model of change, identifying which of the three process models - Research, development and Diffusion, Problem-solving and Social Interaction - was selected, which of the six strategies - value, didactic, authority, psychological, economic and rational - were adopted, which type of innovation

decision - authority, collective or contingent - was followed and the time lag, giving the periods between several of the stages - conception, awareness, interest, adoption, discontinuance etc. (13) Evaluation of the innovation with regard to the six characteristics, namely, Relative Advantage, Compatability, Complexity, Communicability, Observability and Divisibility, (14) Consequences of the innovation, giving out the favourable as well as dysfunctional consequences of the innovation on the system as a whole and (15) A critical appraisal of the innovation in relation to the objectives of the innovation, assessing how far the objections had been realised.

3. CASE ANALYSIS:

While the cases are presented, inferences in the form of conceptualisations or generalisations are deduced in the course of the narration. As and when several aspects of the innovation are described, an attempt has been made to draw conclusions of a general nature as far as possible. This particular procedure of presentation of case studies has enabled an in-depth study of the several aspects of the change process. Since the sample for each innovation consisted of more than one school and since a particular innovation was in different stages in different schools, it was possible to make a comparative study institution-wise and aspect-wise. This type of analysis has been unique for this is the first study where several innovations practised in a multiplicity of schools had been taken up for such a detailed study.

4. THE TECHNICAL VOCABULARY:

A number of terms and phrases with specific meaning in relation to the present study have been used. It has been found necessary that such technical terms are precisely defined. Some terms are synonymous. The definitions and meaning of such technical vocabulary are given in the form of a glossary in the Appendix.

5. SELECTION OF SCHOOLS INCLUDED IN THE SAMPLES:

As has been mentioned earlier, ten innovations were taken up for the present study. The innovation were practised in many schools. The number of schools practising the innovation ranged from four to all the schools in Tamil Nadu. The sample for study for each innovation ranged from 4 Schools to 20 schools. It was possible that a school practised more than one innovation. The list of schools and the innovations practised in them are given in the Appendix - In the case Studies, a certain degree of anonymity to the Institution had been maintained, as agreed to by the investigator at the time of the collection of data.

HIGHER SECONDARY EDUCATION
(Plus Two System)

1. INTRODUCTION:

The introduction of ten plus two plus three pattern of education may be considered to be the greatest single innovation since Independence that has not only evoked the widest discussion throughout the country but influenced many crucial decisions at different levels of education. The innovation has been given several ^{of} connotations like reform, restructuring etc. One of the bases for the innovation is to bring about a uniformity of pattern throughout all the States and Union Territories. It was the Education Commission that made the recommendation for the new pattern as early as 1966. The Commission has recommended that the plus two stage be vocationalised to a large extent. The Commission's recommendations have been endorsed at the State Education Ministers' Conferences several times: Still, some States were yet to implement the scheme. Shukla Committee (1975) gave a detailed report, advancing reasons for location of the plus two in the schools and presenting a ~~comprehensive~~ procedure for implementation of the programme. Tamil Nadu took the decision to restructure the pattern of education in 1975 and the higher secondary schools came into existence in 1978.

2. THE CONTENT OF THE INNOVATION:

The conceptual basis for the innovation:

A diversity of pattern of education was found throughout the country. Not only did every state had a pattern of its own but the standards obtaining in schools varied from state to state. This invited the attention of several commissions

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including the Secondary Education Commission (1956) which recommended a uniform pattern of education. Sampurnanand's Committee on ^{National} Educational Integration (1965) has endorsed the recommendation strongly, saying that uniformity of pattern was the most important reforms needed for national integration. The reasons adduced for the new pattern of education were: (1) A broadly uniform pattern all over the country would facilitate movement of teachers and pupils and strengthen national integration. (2) The new structure would rationalise and strengthen school education (3) It would turn out more knowledgeable and mature students to enter higher education (4) It would reduce pressure for admission on universities and other institutions of higher learning (5) It would provide a distinct stage to introduce appropriate vocationalisation of school education (6) It would provide an opportunity and a means to modernise and strengthen school and university curricula and to restructure them on more scientific lines as well as to serve the social and economic needs of the adolescents. (7) A uniform pattern would facilitate implementation of better educational programmes, production of books, reading materials and instructional aids, training of teachers, ~~new~~ rationalisation of syllabi and improvement of examination practices. (8) It would facilitate mobility of students whose parents move from state to state (9) It would help to solve the problems of students who belong to minority languages, providing them with common text books. (10) It would help postponement of taking decision about future courses

of study by two years and a mature student will be able to take a better decision. A few reasons advanced for location of the plus two stage at the school level were: (1) At the age of leaving tenth standard, the student was not mature enough to follow lecture methods adopted in colleges. Psychologically, the student needed individual attention by teachers. (2) Vocationalisation of plus two stage was possible only if it was located in schools since universities and colleges were foreign to the concept of vocationalisation. (3) The colleges had to concentrate on a higher age group on undergraduate and postgraduate courses and not on pre-degree courses (4) Cost per pupil would be lower in schools (5) Another two years of education would be available to rural students at their doors (6) Students were saved from indirect costs on hostel, transport etc. (7) The quality of schools would improve with better equipments, post-graduate teachers etc., made available on their being upgraded. (8) The culture of the villages would also be enriched with an institution of higher status and learning. (9) While colleges worked for 180 days with frequent interruption due to strikes, study leave, etc., schools worked for not less than 200 days in the year. On the above arguments, the ten plus two plus three pattern and the location of the plus two stage in schools were recommended.

The Mechanics of the Innovation:

The innovation is upgrading of high schools into higher secondary schools. The eligibility for admission into the first year of Higher Secondary Education is a pass in the Tenth Standard Public Examination. Two streams of education are provided (1) General Education (2) Vocational Education. The pattern of

courses and the system of examinations are given in the following tables:

TABLE 1 : GENERAL EDUCATION : SCHEME OF STUDIES
(Subjects)

Subject	No. of periods per week
PART - I : Tamil or Regional language or any Indian or foreign language other than English	4
PART - II : English	4
PART- III : Any four of 22 subjects in the combinations prescribed	24
Non-examination Subjects: Moral Instruction: Physical Education and Community Social Service	3
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TABLE 2 : VOCATIONAL EDUCATION - SCHEME OF STUDIES

Subjects	No. of periods per week
PART - I : Tamil or Regional language or any Indian or Foreign language other than English (Common with General Education)	4
PART - II : English (Common with General Education)	4
PART - III : A) <u>For Vocational subjects with one related subject:</u>	
a) Related subject (Common with General Education)	6
b) Vocational subject	20
Non-Examination subject: Moral Instruction	1
B) <u>For Vocational subjects with two related subjects:</u>	
a) Two related subjects (Common with general Education)	12
b) Vocational subjects	14
Non-Examination subject : Moral Instruction	1
Total	: 35

TABLE 3 : SCHEME OF EXAMINATION FOR GENERAL EDUCATION SUBJECTS

Sl. No.	Subject	No. of Papers	Duration	Total Marks
1.	PART - I	2	3 hrs. each	200
2.	PART - II	2	3 hrs. each	200
3.	PART - III : Four subjects (For subjects with practical)	1 each	3 hrs. each	800
Total Marks:				1200
	Practical - Internal	1		20
	Practical - External	1	3 hrs.	30
	Theory	1	3 hrs.	150
	For subjects without practical	1	3 hrs.	200

TABLE 4 : SCHEME OF EXAMINATION FOR VOCATIONAL EDUCATION SUBJECTS

Sl. No.	Subject	No. of Papers	Duration	Total Marks
1.	PART - I*	2	3hrs. each	200
2.	PART - II*	2	3hrs. each	200
3.	PART - III :			
	A) For vocational subjects with one related subject:			
	*1. Related subject	1	3 hrs.	200
	2. Vocational Theory	1	3 hrs.	200
	3. Practical	2	3 hrs. each	400
	B) For vocational subjects with two related subjects:			
	*1. Related subjects	2	3 hrs. each	400
	2. Vocational Theory	1	3 hrs.	200
	3. Practical	1	3 hrs.	200

*These papers are common with general education subjects.

The salient features of the higher secondary education were: (1) With the upgrading of every third high school; a student had a higher secondary school within easy access. ~~(2) Though there were different types of schools within easy access.~~ (2) Though there were different types of schools with their own boards and examinations at secondary level, namely Board of Secondary Education, Board of Anglo-Indian Schools, Matriculation schools and Oriental schools, there was only one Board and only one examination for all types of schools at Higher Secondary level. This had integrated the common schools and the elitist schools. (3) Every school had to offer at least one vocational course. Many schools offered two and more courses. A particular school offered as many as eight vocational courses. (4) Every school had been provided with well-equipped laboratory. (5) A reinforcement of libraries specially to meet the requirements of higher secondary education was taken up (6) A wide variety of choice of subjects was provided unlike the restricted number of combinations in P.U.C. (7) The standards attainable at the end of the 12th Standard were roughly equal to those attained at the end of the first year of the undergraduate courses. There had been an improvement of standards over P.U.C. (8) In the vocational stream, a student spent about 60% of the instruction time for vocational subjects. The theory and practical contents of vocational subjects ranged from 1:1 to 1:3 depending on the subject. In some vocational subjects, there were two related subjects.

(9) The minimum qualification for teachers of higher secondary education was a post graduate degree in the subject with a teaching degree. (10) In depth orientation courses for 42 days, in two phases, were arranged to be given to every teacher handling higher secondary classes. (11) A crash programme to enable graduate trained teachers to qualify for post graduate degrees had been implemented benefitting over 6,000 teachers. (12) Every school would be having a minimum of 13 postgraduate teachers (13) Practical training in vocational subjects was arranged in factories, farms, dairies, business concerns etc. in the neighbourhood of the school. (14) Part-time teachers to handle vocational theory were drawn from qualified persons actually practising the vocations.

Mode of implementation of the programme:

Soon after Shukla's Committee (1975) presented its report to the All India Council of Secondary Education, the Government of Tamil Nadu appointed a Higher Power Committee (1975) with the Secretary to the Education Department as Chairman, the Vice-Chancellors of the Universities, representatives of teachers' Unions and eminent educationists. The Highpower Committee invited the teachers' Unions, parents, enlightened citizens and others to give their opinion on the adoption of new pattern and location of the plus two course.

The committee recommended that the ten plus two plus three patterns be adopted in the State and that plus two stage be located in schools. A time-bound programme, in the form of a critical Path Method (CPM) for selection of schools, preparation of syllabus, publication of text books etc. was suggested so that the new pattern would be introduced in 1978. Accordingly

the senior most Director of Education was designated Special Officer for restructuring of the Educational pattern, and was entrusted with the task of ^{usuring} assuring in the higher secondary education. After the selection of schools for upgradation, a five day workshop was held for all the departmental officers in the whole state and all the heads of the proposed higher secondary schools in Coimbatore District, a progressive district whose association of head teachers took the initiative to hold the workshop and five selected headmasters from each of the other districts. This workshop not only oriented officers and headmasters about the governmental programme but prepared a detailed guidebook covering every aspect of the implementation of the programme, which became the 'Bible' of higher secondary education as it were. An intensive 21-day orientation programme with the assistance of university and College teachers was arranged for the benefit of the subject teachers. Text books were also published on time. The Higher Secondary Education programme, initiated by a popular government and planned under President's rule was inaugurated again by a popular government elected just three weeks prior to the introduction programme. A second State level workshop cum Seminar was conducted in 1979 at Coimbatore to review the working of the first year of implementation, clear up problems faced and give further guidelines for the schools.

Sample for Study:

The innovation was originally introduced in 1978 in 1000 schools spread all over Tamil Nadu and 200 more high schools

were upgraded in the next two years. The sample for study consisted of 20 higher secondary schools. Questionnaires were collected from 20 Headmasters and 180 teachers. Three Chief Educational Officers, three District Educational Officers, three Principals of Colleges, ten Professors of Colleges, Office bearers of the Association of Head teachers, Graduate Teachers' Association and Association of University Teachers were interviewed.

Documents Studied:

The following documents were studied: (1) Report of the Education Commission, 1964-66 (2) Report of the Shukla Committee of the Central Advisory Board of Education (3) Report of the Rangabashyam Commission of the Government of Tamil Nadu (4) The Government orders relating to the introduction of Plus Two Scheme. (5) The Departmental Syllabuses for higher secondary course. (6) The Handbooks of guide lines for implementation of the scheme evolved in the Coimbatore workshops.

3. OBJECTIVE, DESIGN AND TYPE OF INNOVATION:

The objectives of the innovation were (1) to meet a conflict that had arisen (2) to fill a void in the existing system (3) to invent new ways of dealing with problems and (4) to form part of self-renewal exercises. It had been designed through (i) restructuring of the existing practice and (ii) substitution of the current practice. The innovation was organisational in character though it has a profound impact on instructional and methodological aspects. Less than 20% of the teachers and students were involved in the innovation.

4. AWARENESS OF THE INNOVATION:

The time of awareness of the innovation ranged from 1966 when the Report of the Education Commission was published to 1975 when the Special Officer for restructuring was appointed. The sources through which the practitioners became aware of the innovation were (1) mass media (2) department of education (3) educational journals and (4) headmaster . It is significant that many teachers were able to trace the innovation to the several commissions which had recommended the ten plus two pattern. The overall reaction had been mostly positive and very few persons had taken a neutral attitude. There was no negative reaction from any teachers. The initial reactions to the innovation were (1) This was a panacea for the ills of the system and (2) This was just an experiment. Nobody responded that this was not practicable. It had been gathered that the more innovative, better qualified and urban based teachers were aware of the innovation earlier than the teachers who were less innovative, less qualified and rural based.

5. ADOPTION OF THE INNOVATION

The idea had received wide publicity and evoked a lot of public discussion. The teachers' Union had also arranged symposiums and seminars. Most of the practitioners got interest in the idea a few months after becoming aware of the idea. The factors of interest were (1) It was a probable solution to the problem (2) It was widely talked about in the circle and (3) "It was given from above. I had no options". During the interviews with the practitioners, it was found that though they were aware of the innovation, they had no clear idea of

the innovation. Very few among them had read the report of the Education Commission. Though they had no clear conception of the innovation, they did not make any attempt to get to know more about the idea. The reason^s was that they were not very sure the idea would be given effect to even as the other recommendations of the commission. Further they thought it would clear up as and when the idea was implemented. The two Coimbatore Workshops and the guidelines issued at the end of these workshops gave them a better idea. It may be seen that sufficient steps were taken to shape the idea. ~~It may be seen that sufficient steps were taken to shape the idea.~~ After shaping of the idea, all the practitioners responded positively to the following statements (1) They had a clear picture of what it was about (2) They agreed with its objectives (3) They felt the need for the innovation (4) They believed the idea should be given the top priority (5) They believed it was worthwhile to do this. Most agreed and some were neutral to the statements: (1) They believed it would work here (2) They knew how they would have to change. The idea had since been institutionalised. The innovation had been the most fundamental reform undertaken in Tamil Nadu during the last three decades. The innovation naturally had changed the face and status of the schools. While the benefits mentioned in paragraph 2(b) had accrued to the institutions, a few dysfunctional consequences had been reported (1) There was no integration of the newly appointed post-graduate teachers with the other teachers (2) There was a kind of antipathy between post-graduate teachers and the graduate teachers inducted into the higher secondary section. (3) Students entered XI Standard from different schools:

with different cultures and disrupted the norms and traditions of the school with regard to timings of school, uniform, discipline, participation in co-curricular activities etc., (4) Students of higher secondary section did not 'recognise' teachers handling lower classes (5) Teachers felt that the headmaster and the management were interested only in the higher secondary sections and did not care for the other classes.

6. THE ADOPTER CONTINUUM:

This was a state-sponsored compulsory innovation and the adopter continuum could not be identified as such with regard to this innovation.

7. ROLE OF CHANGE AGENT:

The department of education was the change agent. The change agent had discharged all the functions associated with the change agents, namely (1) develop a need for change in practitioners (2) establish a change relationship (3) diagnose the client's problem (4) create an intent to change (5) translate the intent to action and (6) stabilise change and prevent discontinuance of the innovation. The role of the change agent had been quite helpful. The change agent frequently met the practitioners, knowing their problems and trying to solve the problems. The change agent had adopted a 'friendly and understanding' attitude and had been persuasive. While a few respondents found the change agent to be quite 'authoritarian', while most practitioners agreed that the change agent had been 'democratic' in its approach. The change agent had played a

dynamic and positive role in institutionalising the innovation.

8. ROLE OF OPINION LEADERSHIP:

Though opinion leaders except when identified as Headmasters of the institutions had not played any significant role in influencing the practitioners with regard to the adoption of the innovation, the change agent had made very effective use of the opinion leaders in the system as a whole. The change agent had associated influential leaders in the profession like senior headmasters, office bearers of the teachers' unions and teacher legislators with the innovation right from the beginning and they became a party to the decisions. Most of them played a positive role in influencing the mind of of the profession in accepting the innovation. Nobody adopted a negative attitude. The change agent reported that the innovation had been successfully implemented because of the part played by the opinion leaders in shaping the opinions of the practitioners.

9. DISSEMINATION OF THE INNOVATION:

This was a department sponsored innovation and the practitioners had no part to play in the dissemination of the innovation. But the change agent and other agencies adopted several measures to spread the idea. As soon as the Kothari Commission was published, the teachers' unions conducted several seminars and not only the idea of the new pattern was spread among the teachers and the public, but pressure was brought on the government to take a decision. It was as early as 1970 that the South Indian Teachers' Union conducted a State-wide conventio

when a detailed plan of action for introduction of the new pattern was given to the Government. The Press was used by the Union to spread the new idea. The department of education through its pamphlet on higher secondary education sent to all schools and made available to the public made as many people become aware of the idea as possible. The department also conducted State level and District level workshops for Headmasters and Inspecting Officers to disseminate the idea. The Minister for Education, Government of Tamil Nadu made a whirlwind tour of the State, spoke at several meetings in rural and urban areas and gave the message of vocational education.

10. THE CAUSES AND EFFECTS OF RESISTANCE:

No resistance had been reported from the school system. Resistance to the innovation was shown by College teachers and College managements. The reasons for resistance were: (1) With the closure of the Pre-University classes in colleges which formed the biggest section in the colleges, teachers were afraid that many of them would be rendered surplus (2) Since the plus two course would be the entry qualification for professional courses in lieu of pre-university, the college teachers attached a prestige value to the plus two course and desired to have it in the colleges (3) The Pre-University class was the money-spinner in college finances and with the surplus in the P.U.C. the college managements had been running the highly deficit undergraduate and post-graduate courses. The loss the P.U.C. would, it was feared, bring financial ruin on the

managements. (4) They had equipped P.U.C. laboratories with the aid from U.G.C. They would go waste. Insecurity and loss of prestige may be termed as the causes of resistance. The resistance was got over by the department and the universities acting together through the following steps. (1) No teacher rendered surplus would be sent out. A Faculty Improvement Programme was arranged in the colleges by which teachers were deputed to M.Phil. Course in turns (2) Colleges were permitted to offer additional subjects in under-graduate and post-graduate courses (3) The grant-in-aid code was revised so that the entire salary of the teachers in all colleges was paid by the Government.

11. FACTORS FOR CONTINUANCE OF THE INNOVATION:

The innovation had been continued in all the institutions where it had been introduced and was well on the road to getting institutionalised. The main factor responsible for the continuance of the innovation was that the change agent, namely the Department of Education, had not only committed itself to the innovation, but had taken all efforts to ensure the successful implementation of the innovation. Another important factor was that the practitioners willingly accepted the innovation and offered no resistance. The absence of resistance paved the way to the smooth change. An indirect factor contributing to the continuance of the innovation was that the public being keen on having an institution of higher education in their own places, extended their full support to the idea.

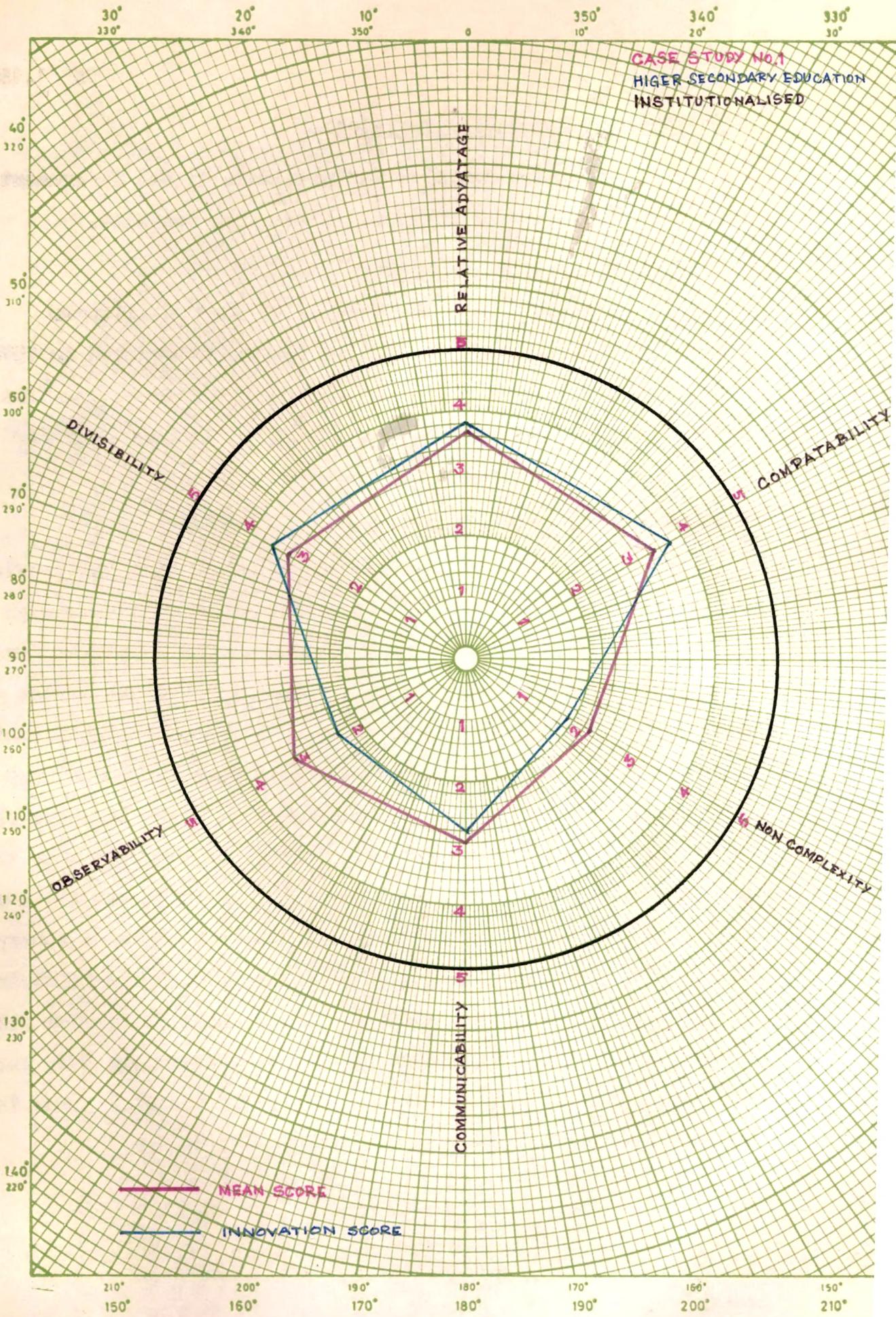
12. THE MODEL OF CHANGE

(a) The Process Model:

Though the innovation had been presented as a resolution of the problem, it is seen that the user was not the starting place. He was just the consumer of a programme evolved by an agency which had supposed for itself the existence of a problem and the innovation as a plausible solution to the problem. Hence the model does not satisfy the basic characteristics of the problem solving model. On the other hand, it follows closely the characteristics of the Research, development and diffusion model, namely (1) The model assumed that the innovation was a rational sequence of activities. (2) The model implied planning on a massive scale, completed by a division of labour (3) There must be a clearly defined target audience, a specified passive consumer who would accept the innovation if it was delivered on the right channel, in the right way and at the right time and (4) The model accepted high initial development costs before any dissemination activity. The research source may be identified as the Education Commission. The process model adopted is therefore seen to be the Research, development and diffusion model.

(b) Strategy adopted:

The innovation had come from above. There was no choice for the practitioner. He had to implement the programme as was given to him in the manner suggested. The strategy adopted is therefore the authority strategy.



(c) Types of Innovation Decision:

The innovative decision had been made by the Government and it is therefore an authority innovation decision.

(d) Innovation decision period:

The innovation came to be known to the practitioner between 1966 and 1975. The innovation was introduced in 1978. Considerable time was given for shaping the innovation. The innovation had been well planned giving sufficient time for the idea to be understood and implemented.

13. EVALUATION OF THE INNOVATION:

The innovation had been perceived better than the previous pattern of education that it had superceded and hence a high score on the factor 'relative advantage'. The innovation was consistent with the existing values and needs of the system and resulted in a fairly high score with regard to 'compatibility'. A middle score on 'complexity' indicated that it was neither 'very complex' nor 'not at all difficult'. There was some amount of complex nature in the nature. Yet it had been got over through the intervention of the change agent who acted to see the implementation of the innovation. Though the innovation, as a concept, had no divisible ^{part, it} was given an above average score on 'divisibility'. It had been given a mean score on 'observability' for the results of such a far reaching innovation could be seen only over the years and that opinions were bound to differ. On the whole, the innovation had not been marked low on any factor.

14. CONSEQUENCES OF THE INNOVATION:

The innovation had several consequences on the system as had been explained earlier. They are presented again along with some other consequences not mentioned earlier. The unfavourable consequences were (1) Due to preoccupation with the innovation, there had been a neglect of standards VI to X, especially when a revised syllabi were also being introduced in these standards. (2) The laboratories had been fully occupied for higher secondary classes and equipments were not often available even for demonstration purposes for other classes. (3) Teachers handling the lower standards had developed a feeling of second rate citizens in the system. (4) There was a division among teachers such as newly appointed post-graduate teachers with or without training, post-graduate trained teachers promoted from within the system and graduate trained teachers already working in the system. (5) Co-curricular activities was given very low importance in the higher secondary classes where almost the whole stress had been on the pursuit for academic education. (6) Students were drawn from different schools (since only one third the schools were upgraded) with different school cultures. No Orientation with regard to the culture obtaining in the higher secondary school was given to them. This had led to a good deal of conflicts and violations of established rules and procedures with regard to school discipline, uniform, morning assembly, participation in school activities, etc., (7) The conflicts mentioned above made students of standards VI to X think that they were double standards obtaining in the school, one for

higher secondary section and another for them. For example, in a number of schools, while school uniform was compulsory for the students of standards VI to X, it was optional for higher secondary students (8) A split among the teachers' union occurred with at least two new unions coming up viz. Post-graduate teachers' Association and Untrained post-graduate teachers' Association. The favourable consequences were (1) The quality of staff had improved with the appointment of a number of post-graduate teachers. (2) Every school had got a pucca laboratory (3) Many students got the facility of 12 years of schooling. In contrast to the intake of less than 60,000 students in the P.U.C. over 1,28,000 students have taken their 12th Standard Public Examination. (4) Nearly 25% of the students obtained some employable skills due to vocational courses (5) The syllabuses of other standards were given an upward revision (6) Teachers got an opportunity to upgrade themselves. (7) The stature of the school had gone up as the preparing ground for professional courses. (8) An interaction between colleges and schools had taken place with regard to curriculum making, preparation of text books, training of teachers, etc. (9) The interaction between industry and schools had resulted in identification of saleable skills and made vocational courses relevant and meaningful. (10) There was a wide awakening for higher education in rural areas with a clamour for upgrading more and more high schools and setting up of polytechnics in rural areas. (11) While the reserved quota of 18% for Scheduled Caste in Professional colleges were never filled when there was Pre-Universi

course even when no minimum was fixed for them, after introduction of higher secondary course, not only all the reserved seats were filled up but many got their seats against open quota and the minimum mark was as high as 82%. The Scheduled Caste students in rural areas were richly benefitted.

15. A CRITICAL APPRAISAL OF THE INNOVATION IN TERMS OF ITS OBJECTIVES:

The main objectives of the innovation were (1) to provide for a uniformity of the pattern of education, enabling easy mobility of students from state to state (2) to provide for an easy access to higher secondary education and (3) to vocationalise higher secondary education. It is found that these objectives had been realised to a large degree. Tamil Nadu had followed most other states in the introduction of the new pattern. With the CBSE and the State pattern being the same, easy mobility of students due to State to State transfer had been made possible, the CBSE forming the largest external sector from which transfers were sought. Higher Secondary Schools located all over the State provided for easy access to post-secondary education. The large increase in the number of applicants for higher education is an evidence of this phenomena. About 25% of the students offered vocational courses, thereby fulfilling one of the basic objectives of the new pattern.

CASE STUDY No.2

1. Name of the Innovative Practice :: Modern Mathematics
2. Type of Innovation :: Instructional
3. No. of Schools practising the innovation :: All Schools in Tamil Nadu
4. Agency introducing the innovation :: State Government
5. Change Agents :: (1) Department of Education
(2) Association of Mathematics Teachers of India.
6. Opinion Leaders :: Teachers' Union
7. Resisters :: Internal - Teachers,
External - Parents,
General Public
8. Causes of Resistance :: Ignorance
9. Stage of Innovation :: Adoption
10. Process Model of Change :: Research, Development and Diffusion.
11. Type of decision :: Authority decision
12. Type of strategy :: Authority, psychological, didactic and value strategies
13. Time lag :: 4 years between awareness and adoption
5 years for total adoption.
14. Evaluation of the Innovation:
 - :: Relative advantage : High
 - :: Complexity : High
 - :: Compatability : Low
 - :: Communicability : Low
 - :: Divisibility : Low
 - :: Observability : Medium
15. Size of Sample for Study : : 20 Schools.

MODERN MATHEMATICS

1. INTRODUCTION:

It used to be said that the Mathematics taught in Primary Schools in the mid twentieth century was the same in content and method as the Mathematics studied by Isaac Newton three centuries back. While the school curricula in Science, History, Geography and the languages changed in course of time, Mathematics curricula remained the same over the years, in spite of notable advances in the field of Mathematics. The Russian Sputnik in 1957 may be termed as the harbinger of revolutionising Mathematics curricula in Schools. The United States of America introduced 'New Mathematics' in its schools and it did spread throughout the world with or without modifications. Though the content and scope of the 'New Mathematics' has changed over the past two decades, the movement has instilled in the curriculum-makers a realisation for constant review of the curricula. In India, the Association of Mathematics Teachers of India (AMTI) under the leadership of world renowned Mathematicians spearheaded the movement to revise mathematics curricula and impressed on the authorities the need to restructure the Mathematics curricula in Indian Schools. Modern Mathematics, as New Mathematics came to be known was introduced first in Central Board Schools and in a few States. Tamil Nadu was among the last of the States to introduce Modern Mathematics.

2. THE CONTENT OF THE INNOVATION:

(a) The Psychological Bases for Modern Mathematics:

The theories enunciated by Piaget, Bruner, Dienes, Gattegno, Montessori, Stern and several others have brought highly specialis

knowledge about human learning to bear on the improvement of mathematical instruction. Piaget's stages of developmental thinking provide invaluable directives for the selection of mathematical content of various levels of education. Piaget shows at length that concepts like 'number' or 'square' which traditional curriculum has often taken as starting points are far less simple than has been supposed and that children respond to such concepts as 'sets', 'equivalence' and 'closed curve' at an earliest stage than to 'number' or 'square'. Bruner has found out that a most natural way of gaining knowledge and appreciation is through discovery methods. Dienes regards the provision of an environment for discovery as the chief task of the mathematics teacher. Gattegno's theories suggest that even the young child is capable of taking a much wider look at mathematics than was encouraged through traditional arithmetic. His Cuisenaire course develops ideas of relationship in colour and length before number. Dr. Maria Montessori emphasises that children are to be encouraged to invent their own problems and that Algebra, Arithmetic and Geometry are to be seen by the children as a unity of organised thinking with diverging emphasis from suitably structured situations.

(b) Components of Modern Mathematics in Tamil Nadu Syllabus:

As the aforesaid theories have specified, modern mathematics has three components (1) inclusion of modern topics (2) Modern treatment of traditional topics. (3) teaching techniques and learning strategies.

The modern topics included in the Tamil Nadu Mathematics syllabus are (1) set language (2) non-denary numbers system and finite number systems (3) Real numbers and properties of number systems (4) Inequations and linear programming (5) mathematical logic (6) statistics and probability (7) simple closed curves (8) logarithms (9) matrices and (10) analytical geometry.

The following traditional topics have been given a new treatment using the modern concepts introduced. (1) Introduction of number concept, (2) extension of natural number system to integers and rational numbers (3) number operations (4) solution of equations (5) geometry (6) polynomials and (7) graphs.

The teaching strategies advocated are use of structural apparatus, identification of patterns, inductive reasoning and games in primary classes and deductive reasoning in higher standards. Discovery approach is used as an effective learning strategy.

(c) Mode of Introduction of the Innovation:

In 1972, the Government of Tamil Nadu decided to upgrade the syllabuses in the light of the developments around the world and especially with reference to the curricula developed by NCERT and adopted by Central Board Schools. Accordingly, ^{was appointed and it} a Committee^s had as Chairman an eminent Professor of Mathematics who was also a Vice-President of the Association of Mathematics Teachers of India. In addition to experienced College and School teachers, three representatives of teachers' union were also included as members. The new syllabuses were introduced in a phased programme in all the standards beginning from 1972-73. As the programme was implemented, the Government decided to introduce 10+2+3 pattern

and the syllabus drawn for 11 standards was condensed for 10 years. This resulted in the first batch of students to study in 2 years in IX and X standards the contents intended for 3 years. Hence, an elongated course for the first batch students was designed giving them 3 years to complete the course in 1978, instead of in 1977, and a nation-wide programme to reduce 'load' on students was taken up. In Tamil Nadu, reduction was done deleting topics and postponing of certain topics like sets to later standard. This resulted in a good deal of confusion since all topics were based on sets and the set language pervaded all through the text books. So a further revision of syllabus was taken up in 1977 and the revised mathematics syllabus is being introduced in a phased programme beginning from 1979-80 and will be completed in 1982-83.

(d) Sample for Study:

The innovation was introduced in all the schools in Tamil Nadu. The sample for study consisted of 20 schools. The questionnaires were issued to and collected from 20 headmasters and 180 teachers. Three headmasters, 9 teachers, 2 master educators, three District Educational Officers and two Office bearers of the Association of Mathematics Teachers of India were interviewed.

(e) Documents studied:

The following documents were studied.

(1) The Departmental syllabuses in Mathematics published on September 6, 1972, June 2, 1975 and July 11, 1975. (2) The Government Orders relating to introduction of new syllabuses and training of teachers. (3) The text-books in Mathematics (4) The articles in 'The Hindu' and 'The Indian Express'.

3. OBJECTIVE, DESIGN AND TYPE OF THE INNOVATION:

The objectives of the innovation are (1) to change the customary usages and practices (2) to reduce the gap between the current practice and declared objectives (3) to redefine existing problems and recognise new ones (4) to form part of self-renewal exercise and (5) to meet a conflict or crisis that has arisen.

The innovation has been designed as (1) substitution of current practice (2) alteration of the current practice (3) Restructuring of the existing practice and (4) Elimination of old behavioural patterns and habits.

The type of the innovation has been instructional though it has an impact on methodology.

The respondents have reported that introduction of modern mathematics has been the most revolutionary change they have come across in their career. It required a good deal of change in them.

4. AWARENESS OF THE INNOVATION:

Most of the teachers became aware of the innovation when they attended the ten day orientation course conducted by the department of education. Some others had become aware of the innovation a little earlier, that is, as soon as the syllabuses were published and sent to the schools. A few teachers had known the innovation much earlier. While the source for most of the teachers was the department of education, for those who had known the innovation earlier, it was either the British Council who conducted a course in Modern Mathematics in 1968 or the N.C.E.R.T. - U.G.C. Summer Institutes. A few had got the

idea from the Association of Mathematics Teachers in India. The Primary sources traced included countries - Soviet Union, U.S.A., U.K. - which introduced modern mathematics earlier, Mathematicians like Boole, Cantor, who contributed much to set theory or persons connected with propagation of modern mathematics. Most teachers adopted a neutral attitude towards the innovation when they became aware of it. While some were over-enthusiastic, others were equally cynical about the outcome. The predominant initial impression was that this was just an experiment.

5. ADOPTION OF THE INNOVATION:

Almost all the teachers got interested in the idea immediately on becoming aware of it. While most teachers became interested in the idea as it was given from ^{above} about and they had no options, others were interested because it was widely talked about in their circles or because its novelty was appealing. Most teachers however, could not get more information because they did not know wherefrom to get further information or because they thought that it would clear up as and when the idea was put into practice. The orientation courses, being of a shorter duration, did not give the teachers a full knowledge of the concepts. There were discussions among teachers themselves, attendance at voluntary courses arranged by teachers themselves with the help of more knowledgeable persons and visits to mathematics department in the neighbouring colleges. Professional organisations played a leading role in organising voluntary courses. It is significant teacher training

institutions not only did not play any role in spreading the idea in the initial stages, but were among the last to take note of the innovation. Their syllabus continued to be based on the old syllabus which was no longer adopted in schools. While a few of the teachers were enthusiastic about the idea and welcomed the innovation, most teachers opposed the innovation. A small minority of teachers were skeptic about the innovation. The idea was shaped in the orientation courses and in the informal get-togethers of teachers. The departmental syllabus in Mathematic which used to be skeleton-brief earlier was now drafted elaborately giving the stages of learning of every concept. The idea was implemented as it was formulated. Most teachers responded positively to the following statements (1) They had a clear picture of what it was about (2) They agreed with its objectives (3) They felt the need for the innovation (4) They believed it would work in their school (5) They knew how they would have to change (6) They believed it was worthwhile to do this. The innovation has been institutionalised. In the course of the adoption of the innovation, a great amount of teacher anxiety has been reported. The innovation, being a departmentally sponsored one, was accepted by the teachers, but they were conscious of their own limitations and were eager to improve their knowledge of the innovation. While teachers in the urban areas had several advantages, the teachers in the rural areas were hard pressed and had to depend solely on departmental programmes. A change from diffidence to an amount of self-confidence that they could learn new concepts was found among a large number of respondents.

6. THE ADOPTER CONTINUUM:

Since the innovation was government sponsored and compulsory for adoption in all schools, the adopter continuum could not be easily distinguishable on time scale, except for a small minority who had taken to the innovation earlier to the governmental effort purely on personal initiative and interest. However, an attempt was made to identify the adopter continuum on their attitude towards and interest in the innovation. The innovators and the early adopters were on the high side of the linear continuum on 11 factors namely, social participation, cosmopolitanness, change agent contact, movement with colleagues, exposure to mass media, knowledge of innovations, empathy, rationality, attitude toward risk, aspiration and opinion leadership, while on dogmatism, they were on the low side. With regard to norms, they were equally distributed between modern and traditional. In the movement of adopter categories, there was a significant change especially with regard to late majority and laggards, as can be seen from the Table 2.6

TABLE 2.6 : MOVEMENT AMONG ADOPTER CATEGORIES

To \ From	I	EA	EM	LM	L	TOTAL
I	3					3
EA		36	12			48
EM			109	18	12	139
LM					10	10
L						0
TOTAL	3	36	121	18	22	200

Upward Mobility: 52; Downward mobility: Nil

It has also been reported that many teachers were initially ~~in~~ diffident about the innovation. After the orientation course, their diffidence became less and after a year of classroom experience of the innovation, they had gained quite some confidence. Attendance at voluntary courses, extensive study of reference books, discussions among colleagues and teachers in other schools and such other self-improvement activities have been reported on a large scale. This kind of initiative accounts for the ^{change} change in the distribution of the adopter categories.

7. CHANGE AGENTS AND THEIR ROLE:

Two distinct change agents have been identified with respect to the innovation (1) The Association of Mathematics Teachers of India (AMTI) (2) The department of education. The AMTI is a registered body and was promoted in 1965 by the South Indian Teachers' Union. It also published a journal by name, Mathematics Teacher. The Association had played a significant role at the national and state level in propagating changes in Mathematics curricula. Being headed by eminent Mathematicians holding prestigious positions like Vice-Chancellor, UPSC member etc., the association, though small with regard to membership, was able to influence decision making at governmental levels. The AMTI pioneered in focussing the attention of the NCERT and the state government on Modern Mathematics, Recognising its role as a change agent, the government of Tamil Nadu appointed one of its Vice-Presidents as the Chairman of its syllabus Committee and nominated three other members to the Committee. The AMTI prepared the first draft of the syllabus from which the new syllabus emanated.

Further through its journal and by organising voluntary courses, it evoked an interest in the innovation and helped the teachers to gain sufficient knowledge of the innovation. It actively associated itself with the government in organising orientation courses by loaning the services of its members. When a world-wide movement against New Mathematics was launched and when the National and State Governments were about theyield to the pressures of parents, the A.M.T.I. presented facts and figures about the advantages of the innovation and helped in the sustenance of the innovation, suggesting modifications and corrections. Hence the AMEI had helped (1) in developing a need for change (2) in establishing a change relationship (3) in diagnosing the problem (4) in creating an intent to change (5) in estabilising change and preventing discontinuance. The change agent influenced only a few, but influenced the influential section. Further it tackled the opinion leaders at various levels and this influence over the opinion leaders was responsible for the absence of any stiff resistance to an innovation which was totally new and demanded a good deal of effort and change in the attitudes on the part of the practitioners. The department of education as the change agent had established a change relationship with the practitioners. Representatives of teachers' unions were associated in the decision making process. For the first time in the history of Tamil Nadu, a massive teacher orientation programme at a cost of about Rs. Ten million was launched upon. The three-tier training programme was arranged with the active assistance of

the teachers and covered all teachers handling Modern Mathematics. Both change agents played a quite useful role and they were described as 'friendly and understanding', 'persuasive' and 'democratic'. In short, the role of the change agents had greatly helped in the acceptance and implementation of the innovation.

8. ROLE OF OPINION LEADERSHIP:

One of the change agents, namely the department of education, identified the teachers' unions as the opinion leaders. Militancy among teachers became visible in 1970 and certain anomalies in the pay structures announced by the Tamil Nadu Pay Commission in 1970 united teachers and teachers' unions became very powerful forces. The change agent tactfully asked the unions to nominate their representatives on several of the syllabus committees. They being party to the decision, the unions not only did not offer any resistance, but gave whole-hearted support to the innovation.

9. DISSEMINATION OF INNOVATION:

Though the innovation was introduced in all schools simultaneously, there were two situations that might be considered. Even before the introduction of the innovation as a curricular reform in all the schools, a few teachers in Madras and Coimbatore had taken interest in the idea even earlier when they were introduced to the idea by the British Council and the AMTI. On their getting the idea, they tried the same in their classes as enrichment material outside their regular class hours as part of the Mathematics club activity. Many teachers in their neighbourhood got interested

and the idea was passed on by arranging non-formal voluntary courses for teachers. The activity part of the innovation was greatly appreciated and schools began to introduce such activities in their schools. Mathematics exhibitions followed as a result of the changes brought in the school. This earlier effort had greatly influenced the schools and the teachers to accept the innovation when it was introduced as part of the regular curriculum. The dissemination was purely voluntary.

The second situation was the dissemination of the innovation to other types of schools. The innovation was introduced at first only in schools affiliated to the Board of Secondary Education. Anglo-Indian schools and Matriculation schools wanted that the innovation be extended to their schools also. The reason for their desire to introduce the innovation was the prestige value attached to the innovation. Their syllabuses included a few more additional topics than the secondary school curriculum.

10. THE CAUSES AND EFFECT OF RESISTANCE TO THE INNOVATION:

Resistance to the innovation has been reported among teachers, parents and general public. Only a very small section of teachers had shown resistance to the innovation. They did so in their individual capacities and no resistance as a group has been reported among teachers. The resistance was shown indirectly by not attending orientation courses and by grouping with parents who resisted the innovation. A very small but vociferous group of parents expressed their resistance to the innovation by writing to the press and the department. The

resistance had been due to preference for the familiar in contrast to the unfamiliar. The main criticism had been that parents could not help their children in their lessons. Ignorance of the innovation was a major factor for resistance. Badly written text books also contributed to some amount of resistance to the innovation. Resistance was got over by modification of the ~~innovations~~. The set concept originally introduced in the I Standard itself was postponed to VIII Std. The resistance was only to that part of the innovation pertaining to sets and their use in learning numbers and operations on numbers. The resistance had not much impact on the working of the innovation in the schools. However, there was much criticism of modern mathematics in the press. There was rethinking at the centre and the syllabus for central schools was revised. Yielding to the pressure, the Government constituted a Committee to review and revise the curricula. The syllabus was revised, postponing the study of set language to VIII Standard, but retaining the content of modern mathematics. It is significant that there was no resistance on the part of the teachers' organisations and the students. At the same time, no efforts were taken to educate the resisters with regard to the innovation and win them over.

11. FACTORS CONTRIBUTING TO CONTINUANCE OF THE INNOVATION:

Some of the factors that contributed for the continuance of the innovation were (1) The innovation was government-sponsored and introduced in all the schools under the authority of the Government (2) The teachers' unions were involved in the decision making process (3) There was a universal demand for change in curricula and the innovation just satisfied the demand

(4) Steps were taken to educate the practitioners about the innovation by organising intensive orientation courses. (5) The ground was well prepared for the introduction of the innovation by the change agents, namely the AMTI and the British Council. (6) The Department of Education adopted a liberal attitude to enriching the school library. (7) The innovation formed part of a total package of revision of curricula. (8) There was no resistance from students and teachers' organisations.

12. THE MODEL OF CHANGE:

(a) The Process Model:

The innovation had as its basis the research findings of several psychologists and educators like Piaget, Montessori, Dienes, Stern and others. From the theoretical formulations was developed the curriculum as a package in a rational sequence of activities. Planning was made on a large scale. The audience was clearly defined and a passive consumer willingly accepted the innovation. The training of teachers was also undertaken on a massive scale. All the characteristics of the Research, Development and Diffusion model were found in the process.

(b) The Strategies Adopted:

The innovation was introduced by the Government and there was no question of any teacher not accepting the innovation. Hence the authority strategy was adopted. By associating practising teachers and their union leaders in the decision making, a certain amount of psychological strategy could be

discerned. By training the teachers through orientation courses and preparing them for adoption of the innovation, didactic strategy was also resorted to. The innovation was much published as the most needed reform for the benefit of children, thereby adopting value strategy also.

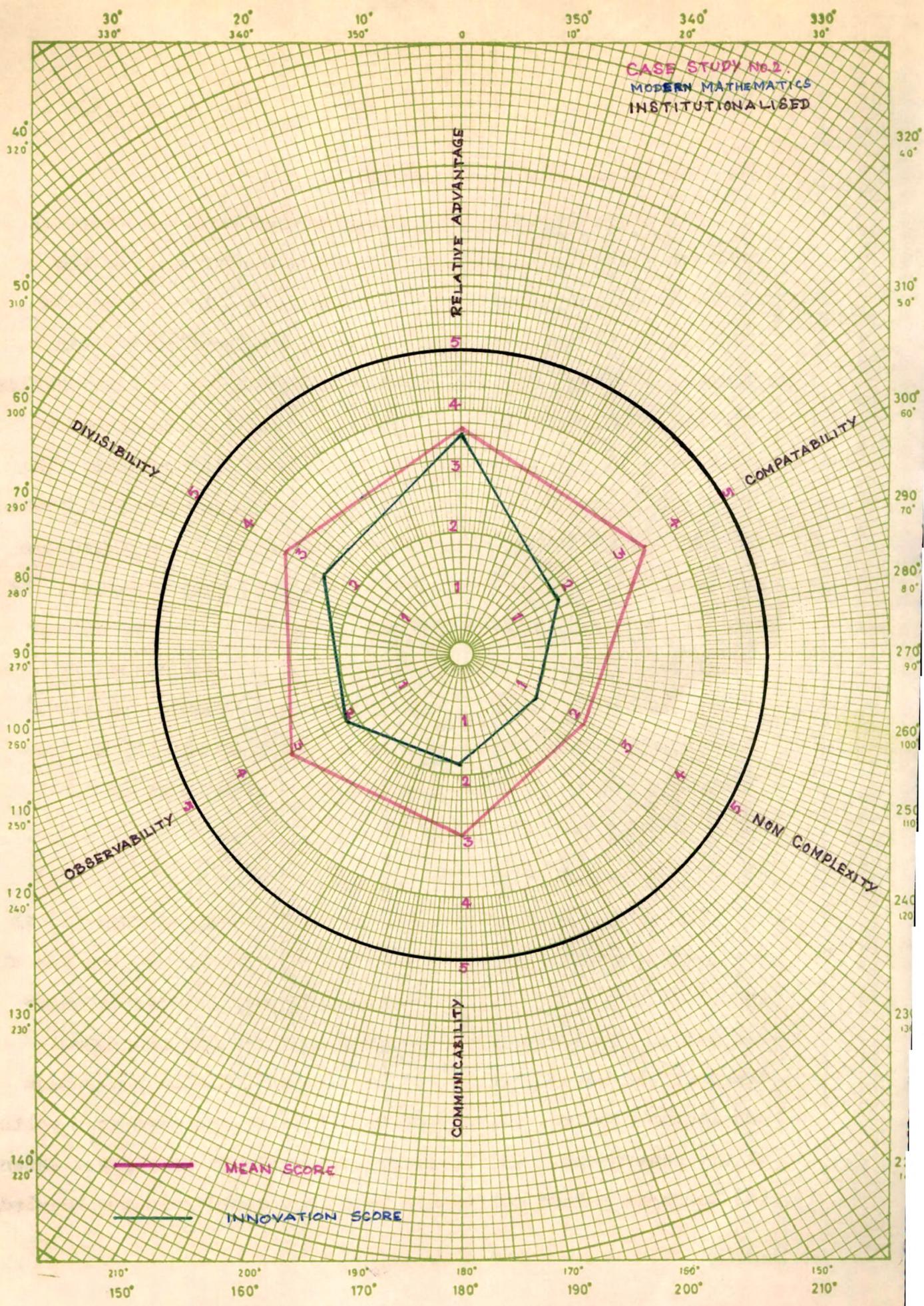
(c) Type of Innovative Decision:

The innovation was introduced by the Government, who in view of its superordinate power position, was able to influence the teachers. It was therefore an authority decision.

(d) Innovation Decision Period:

The innovation was known by 1968. The decision to adopt the innovation was taken in 1970. The draft syllabus was published in the Tamil Nadu Government Gazette early in 1972 and communicated to schools, teachers' associations and the educational bodies. The syllabus was revised based on the comments received. The syllabus was introduced in a phased programme, starting from 1972-73 and completed in 1977-78. The decision to modify the syllabus in the wake of resistance was taken in 1977 and the modified syllabus was published in 1979. It was introduced in 1979-80 in standard I and II and the introduction of the modified syllabus will be completed in 1982-83. It may be seen that there was sufficient time gaps between the awareness stage and the adoption stage, as well as in between the the intermediary stages, namely persuasion and decision stage.

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13. EVALUATION OF THE INNOVATION:

The innovation had been considered as much advantageous over the prevailing practices and hence marked high on the factor 'Relative Advantage'. But the innovation was ranked high on 'complexity' factor and low on 'compatibility' and 'communicability' factors. It had medium score on 'divisibility' and 'observability' factors. The innovation was welcomed as essential, likely to promote the quality of instruction. The 'complexity' of the innovation and lack of ease of communication of the innovation necessitated massive orientation programmes for teachers. No disadvantages to students were reported. It was reported that students weak in Mathematics had performed better in modern mathematics topics than in traditional mathematic areas. The parents could not find any perceivable relative advantage in the innovation. The low communicability of the innovation might be responsible for the resistance of the innovation by the parents.

14. CONSEQUENCES OF THE INNOVATION:

The favourable consequences of the innovation were (1) An upgraded modern syllabus was adopted (2) The innovation was also responsible for updating and revising the syllabuses in other subjects. (3) An interaction between university and school teachers had taken place. (4) In-service training programmes had become routine, consequent to its being accepted as a policy of the Government. (5) Teachers were enriched to a great extent (6) Teachers gained confidence that they could gain new knowledge.

on unfamiliar topics through in-service programmes (7) Because of the three tier training programmes, a large number of resource persons were identified whose services were used by the department for a variety of programmes (8) Change was accepted as a way of life and further innovations could be easily introduced (9) The school libraries were enriched (10) Due to the activity dominated curriculum, clubs were formed and mathematics got a place in Science Exhibition.

The unfavourable consequences included: (1) A clamour for government-financed orientation programme for every innovation introduced became to be made (2) Due to ease with which a student could score marks in modern mathematics topics, traditional topics were neglected by most students (3) Even for courses organised by voluntary agencies, teachers began to claim travel and incidental expenses that too at governmental rates, thereby thwarting the initiative of such agencies to conduct programmes.

15. A CRITICAL APPRAISAL OF THE INNOVATIONS IN TERMS OF ITS OBJECTIVES:

The objectives for the introduction of the innovation were (1) to update the curricula in mathematics taking into account the newer needs for mathematics for study of various subjects and (2) to improve the quality of instruction in Mathematics. These objectives had been achieved to a large extent. The syllabus in Mathematics were revised thoroughly in line with the world-wide trends in Mathematics education. New topics like sets, probability

matrices, linear programming etc. had been introduced. Mathematical logic was introduced first, but later withdrawn in the revision of the syllabus. The orientation programmes for teachers not only concentrated on content but introduced to the teachers modern & techniques of instruction and exposed them to an activity-oriented learning situation. But in actual classroom teaching-learning syndrome, the traditional methods held the sway. Even where Mathematics clubs were reported to be active, the activities were more of magic and puzzles and were divorced from learning practices. Anyhow, this innovation set new goals in the construction of curriculum and influenced the thinking of person associated with the revision of syllabuses in other subjects too.

CASE STUDY No.3

1. Name of the Innovative Practice :: Objective based Evaluation
 2. Type of Innovation :: Methodological
 3. No. of Schools reporting the innovation :: 63 Schools
 4. Agency introducing the innovation :: Individual School Headmasters
 5. Change Agents ::
 1. The N.C.E.R.T.
 2. The State Institute of Education (SCERT)
 3. The Headmasters
 6. Opinion Leader :: Teachers
 7. Resisters :: Internal to the system: Teachers
 8. Causes for resistance :: Increase in workload;
Complexity of the innovation.
 9. Stage of Innovation :: Continued in 2 Schools and discontinued in others.
 10. Process Model of Change :: Research, Development and diffusion model
 11. Type of Decision :: Contingent - collective and authoritative
 12. Type of Strategy :: Value and rational strategies
 13. Time lag :: No time lag between awareness and adoption
 14. Evaluation of the Innovation ::

Relation Advantage	:	High
Communicability	:	Low
Complexity	:	Very hi
Compatability	:	High
Divisibility	:	High
Observability	:	High
 15. Sample for Study :: 10 Schools
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OBJECTIVE BASED EVALUATION

1. INTRODUCTION:

Examination reform has always engaged the attention of educational theorists, administrators and practitioners. The University Education Commission (1948) under the Chairmanship of Raghakrishnan has said, "If we are asked to make one and only one recommendation with regard to Indian Education system, it is reform of examinations". The examination system has been found to be defective in many respects. The late 50's and early 60's saw a considerable amount of attention being given to what are known as instructional objectives. These are termed as behavioural objectives, since the objectives are given in terms of the changes in behaviour in a person that would result from instruction being imparted to the person. Performance objectives, measurable objectives and operational objectives have also been used as synonyms for behavioural objectives. The behavioural objectives state explicitly what is expected to result from instruction. The objectives are specified in clear, unambiguous statements and evaluation of students through attainment of specified, measurable objectives is expected to reduce the errors in the examination system.

2. THE CONTENT OF THE INNOVATION:

The innovation was designed to improve the objectivity of the examination through a reform in the question papers.

(a) Conceptual Background of the Innovation:

Benjamin Bloom and his team have given a sixfold taxonomy of educational objectives, namely, knowledge, comprehension,

application, analysis, synthesis and evaluation. While knowledge is at the lowest level of learning with just the ability to recall and recognize terms, definitions, concepts, etc., learnt, evaluation is at the highest level of learning with the capacity to discern situations and formulate proper judgements. The National Council of Educational Research and Training, New Delhi, with the help of Benjamin Bloom, identified the first three levels of learning, namely, knowledge, understanding (Comprehension) and application as those attainable at school level in our country. One other objective relating to the psychomotor domain, namely, skill, was also added as the fourth objective. Objective based evaluation is required to find out how far a student has attained the four objectives. For each objective, appropriate specifications were identified, for example: The specifications for the knowledge objective are (1) Recall terms, definitions, concepts, etc., and (2) Recognise terms, definitions, concepts, etc.

(b) The mechanics of the Innovation:

The innovation was preparation of a good question paper. The paper setting has got three stages: (1) Design stage when the administrator gives out his idea about the format of the question paper. (2) The actual preparation of the question paper (3) Evaluation of answers.

The question paper-setter has to know what he is going to test and he must, therefore, be given a design of the question paper, spelling out the instructions for the paper setter. The design specified the following, among others:

1. Weightage to objectives : (How much for each objective)
2. Weightage to content : (How much for each topic, sub-topic)
3. Weightage to types of questions : (How much to objective type questions, short answer questions, problems or essays requiring long answers).
4. Pattern of choice : (No choice, Internal choice, Overall choice)
5. Sections : (How the question paper should be divided into sections)
6. Difficulty level : (How many easy questions, difficult questions of average difficulty)
7. Time : (Duration of the examination)

Taking the design into consideration, the paper-setter first of all prepares a blue print which is a three dimensional chart, with the contents, objectives and types of questions as the principal axes. For a given design, any number of blue prints can be prepared. After preparing his blue print, the paper-setter selects appropriate questions, each question covering a specified topic, testing a specified objective and framed in a specified type of question. Then he goes through other modalities, like editing to remove repetition, ambiguity, faulty wording, etc. and structuring to give it a form etc. He then prepares a scoring key, giving the right responses to objective type questions and an evaluation schedule for other questions, giving outlines of answers and hints for evaluation. A specimen of the design ~~and~~ a blue print is given in Table 1.

TABLE 1 : BLUE PRINT FOR QUESTION PAPER IN MATHEMATICS

Unit: :: Areas

Time: 40 Minutes

Class :: VIII Standard

Maximum : 25 marks.

Sl. No.	Objective Content	KNOWLEDGE			UNDERSTANDING			APPLICATION			SKILL			TOTAL
		E	S	O	E	S	O	E	S	O	E	S	O	
1.	Rectangles	2 (1)	3 (3)	-	-	2 (1)	2 (2)	-	-	-	-	-	-	9 (7)
2.	Pathways	2 (1)	1 (1)	-	-	-	1 (1)	-	2 (1)	1 (1)	-	-	-	7 (5)
3.	Four walls	-	-	-	-	2 (1)	2 (1)	5 (1)	-	-	-	-	-	9
4.	TOTAL	4 (2)	4 (4)	-	-	4 (2)	5 (5)	5 (1)	2 (1)	1 (1)	-	-	-	25 (16)

Figures within brackets indicate the number of questions and
Figures outside the brackets indicate marks.

(c) Sample for Study:

The sample for study consisted of ten schools. Questionnaires were issued to 10 headmasters and 90 teachers. Three headmasters and nine teachers were interviewed. The Professor, Evaluation Unit, SCERT who was in-charge of the Orientation Programmes in Evaluation was also interviewed.

(d) Documents for Study:

The following documents were studied:

- (1) The materials prepared in the three workshops on Evaluation, conducted by the Examination Reforms Unit, NCERT with the assistance of the State Institute of Education
- (2) Instructions issued by the headmasters of the schools under study to the paper-setters in their schools
- (3) Question papers and test materials used in the schools under study.

3. OBJECTIVE, DESIGN AND TYPE OF THE INNOVATION:

The objectives of the innovation were: (1) to find new ways of dealing with an existing problem and (2) to change the ways and practices accustomed to.

The innovation had been designed mainly as a replacement of the current practice though to a certain extent it was a restructuring of the existing practice or alteration of a current practice. The innovation was mainly methodological in character though it had ramifications on instructional practices.

4. AWARENESS OF THE INNOVATION:

The State Institute of Education, Tamil Nadu (as the present State Council of Educational Research and Training was then called) conducted during 1967 and 1968 a workshop in Evaluation with the resource persons drawn from the National Council of Educational Research and Training, New Delhi. The participants were drawn from the college teachers who were associated with paper setting for S.S.L.C. Public Examination and experienced headmasters and teachers. Thus 60 participants were exposed to evaluation concepts

and techniques in three phases, each phase running to 10 days, with about 6 months interval between successive phases. The exposure to the innovation was confined to the institutions from which the participants were drawn.

The State Institute of Education then conducted 3 day workshops at district level in 1970, each being attended by about 50 heads of schools and teachers. In this manner, about 700 teachers were made aware of the innovation.

The State Institute of Education also brought out in book form the materials prepared at the State level workshop along with designs, blue prints and model papers and distributed them to all the schools in the State during 1971-72.

The Regional College of Education, Mysore, had objective based evaluation in their curriculum as early as 1968 and the College of Education in Tamil Nadu included the same in their syllabus in 1975. Teachers trained in these institutions were also exposed to the concept of the innovation.

Since the State level as well as the district level workshops drew one and only one teacher from an institution, each of the institutions had only one subject area in which it had a person exposed to the ^{concept} ~~except~~ and it had no persons trained in the other five subject areas.

The sources of the innovation was, therefore, identified as:

1. National Council of Educational Research and Training, New Delhi
2. State Institute of Education, Tamil Nadu.
3. Headmasters/Teachers who were trained in the State level and district level workshops and
4. Colleges of Education.

The time of awareness of the innovation ranged from 0 to 5 years. Though the State Institute of Education introduced the innovation to the schools, no directive to adopt the innovation in all schools was issued by the Department. It was left to the option of the individual schools. Therefore, only 63 schools were reported to have introduced the innovation in their schools. These schools were identified by the Inspecting officers as innovative schools and the heads of the schools were known innovators.

Most of the teachers were not able to identify any other source than the immediate source who introduced the innovation. The initial reaction to the innovation was mostly neutral and most teachers considered it as just an experiment. A few thought that the innovation was a panacea to the ills of the system, while a small section viewed it as a proven educational ideal.

5. ADOPTION OF THE INNOVATION:

The adopters got interested in the innovation immediately on becoming aware of it. They considered it as a probable solution to the problem they were facing. They also thought it would add a new dimension to the functioning of the school. The novelty of the innovation was also appealing and they felt that it would in the longer run pay dividends.

Though most of the teachers desired to collect further information about the innovation, they did not know where from they could get further information. The idea was passed on to

the teachers through staff meetings and seminars. While many approved of the innovation, a few were skeptic about it and a few others preferred to be silent.

Though the teachers agreed with the objectives of the innovation and felt the need for the innovation in the school, most of them lacked a clear idea about the innovation. They felt they were totally lost in the jargons like objectives and specifications and the niceties of the techniques of the innovation like design and blue print and could not catch the spirit of the innovation. While the innovation had been continued in two schools, all other schools had discontinued it.

6. THE ADOPTER CONTINUUM:

Since the innovation was short lived, no perceptible change in the category of adopters could be discerned. While many of the teachers were initially attracted by the innovation, they found it was difficult to put it into operation. Question paper setting became a dreadful task, consuming a lot of time and inviting a good deal of criticism from fellow teachers. The mobility of the adopters is given in the following table.

TABLE 1 : THE MOBILITY OF THE ADOPTER CATEGORIES IN THE COURSE OF THE ADOPTION OF THE INNOVATIVE^{oN}.

From	I	EA	EM	LM	L	TOTAL
To						
I	13	3				16
EA		34	2			36
EM			53	3		56
LM				36	3	39
L					9	9
TOTAL	13	37	55	39	12	156

Upward Mobility = 11.

Downward mobility = Nil

7. ROLE OF CHANGE AGENT:

The change agents were identified to be (1) The NCERT, (2) The State Institute of Education and (3) The Headmasters of the school. The change agents developed an intent to change ~~in the persons and assisted in translating the intent to change.~~ in the persons and assisted in translating the intent to action. The change agent influenced only a few teachers. While the change agent had been variedly described as 'friendly and understanding' and 'persuasive and cosmopolite', his role was

considered 'highly rewarding' and 'quite helpful'. The change agent had higher education and higher status than the clients. But the change agent and most of the clients had the same values.

While the N.C.E.R.T. and the State Institute of Education dealt with the clients through the headmaster or the teacher trained in evaluation, the headmaster dealt with the teachers directly. No recourse to opinion leaders was made.

8. ROLE OF OPINION LEADERSHIP:

Though the presence of opinion leaders was reported in every school, no effort was seen to have been taken to influence the clients through the opinion leaders. The innovation being totally new to almost all of the teachers and requiring considerable effort, it was thought that direct dealing with teachers alone would pay dividends. It was feared that opinion leaders, if given undue importance, might hamper the very introduction of the innovation.

9. DISSEMINATION OF INNOVATION:

No effort to spread the innovation to other schools was consciously made by the adopters. However, a few schools and a few teachers in the neighbourhoods of schools got interested in the idea by themselves and sought guidance and assistance from the client system with regard to the details of the concept and the process of implementation. Some of the schools who introduced the innovation after getting such assistance had

discontinued the innovation after sometime. The reason had been stated that the innovation was difficult to comprehend and implement.

The change agents did not also take steps to introduce and implement the innovation in the schools. The Professor, Evaluation Cell who was incharge of conducting orientation courses felt that the work of the State Institute of Education stopped with introducing new concepts to enterprising known innovator group and it was for the latter to tryout the ideas. The State Institute of Education suffered from constraints of finance and trained technical persons. Even for training, they depended on NCERT staff. The State Institute of Education had no direct or indirect influence over the Board of Secondary Education which was in-charge of holding the S.S.L.C. Public Examinations.

10. THE CAUSES AND EFFECTS OF RESISTANCE:

Resistance was reported from among the teachers in every school. Resistance was exhibited in a few schools openly, a few teachers saying that the innovation would not work. Others resisted indirectly. But the proportion of resisters to the total number of teachers was small. Most of the resisters resisted the innovation in their individual capacities and also as a group. They were pessimistic that they would not be able to succeed and they also feared that the innovation would fail. A few were convinced that old methods were the best ones, while some resisted as their friends had not adopted the innovation.

The predominant motive for resistance was the feeling that the workload would increase. Some of them did not get clear conception of the innovation while a few others felt the innovation had failed in other schools.

The resistance was to the whole idea of the innovation as it was and led to its rejection in all but two schools. In the two schools where the innovation was continued, the resistance was got over through personal persuasion of the resisters individually and collectively by the headmasters or by brushing aside the resistance. The resistance to the innovation had considerably affected the implementation of other innovations.

11. FACTORS FOR CONTINUANCE OR DISCONTINUANCE OF THE INNOVATION:

The innovation had been discontinued in all except two schools. While most schools discontinued the innovation after trying it out for 2 years, others discontinued after 3 or more years of practising the innovation. The reasons for discontinuance were (1) resistance to the innovation and (2) the person who introduced the innovation leaving the institution. It is significant that in all the eight schools which had discontinued the innovation, there had been a change of headmaster since the introduction of the innovation and that in the two schools where the innovation was continued, there was no change of headmaster. The initiative to discontinue the innovation had been mostly taken by the headmaster. The predominant feeling among the teachers on the discontinuance of the innovation had been a sigh of relief. Most teachers had an open mind with regard to the

reintroduction of the innovation after removal of the defects. A very significant factor for discontinuance was that no change had been brought about in the question papers of the S.S.L.C. Public Examination on the lines of the innovation. The school examinations being a replica of the Public Examination had failed to change radically. The discontinuance may therefore be said to be due to disenchantment.

With regard to the two schools where the innovation was continued, it was found that the change agents, namely, the headmasters were committed to the innovation. They were convinced about the good effects of the innovation. They had trained a good number of their teachers in the techniques of evaluation. The teachers themselves were deputed to assist SCERT, Extension Departments of Colleges of Education and other agencies in conducting orientation programmes in Evaluation. Further, in these two schools, the objective based evaluation was introduced for conducting unit tests and the schools had developed good question banks. These factors were primarily responsible for the continuance of the innovation.

12. THE MODEL OF CHANGE:

(a) The process Model:

The innovation had its origin in the theoretical studies in the field of evaluation and had emanated from a research institution. Though there was a problem to be tackled, there was no search for solution on the part of the practitioners. It cannot therefore belong to the problem-solving model. The innovation had come from research. The innovation may therefore

be considered to have adopted the Research Development and Diffusion Model. The first three stages in the model, namely, producing the innovation, engineering and packaging the innovation and informing about the innovation were gone through, though full knowledge of the innovation was not passed on to the practitioners.

But it may be seen that the next three stages did not follow: (1) No opportunity was provided to examine and ^{assess} access the operating qualities of the innovation, that is, conviction was not built. (2) Familiarity with the innovation was not built and no basis for assessing the quality, values, fit and utility of the innovation in a particular institution was provided, that is, no testing was made. (3) No attempt to operationalize by fitting the characteristics of the innovation to the characteristics of the adopting institution was effected. Naturally, the final stage of the Research, Development and Diffusion Model, namely, establishment or institutionalisation of the innovation did not materialize.

(b) Strategy Adopted:

Teachers selected to undergo the state level and district level workshops were experienced persons with a good background in their profession. So the adopter was viewed by the change agent as a professional to whom appeal could be made in terms of value priorities. The change agents were also certain that they would convince the adopters of the utility, feasibility and effectiveness of the innovation through hard data and logical arguments. It may therefore be seen that both value and rational strategies were adopted.

(c) Type of Innovation Decision:

It is observed that the adopters made a collective decision in trying out the innovation as well as in rejecting the innovation. ~~At the same time, the innovation.~~ At the same time, the innovation was introduced by the headmaster who, in view of his superordinate power position, was able to influence the teachers. So, it was also an authority decision. It may therefore be observed that the innovation-decision was a contingent one, being a sequential combination of two types of innovation decisions

(d) Innovation Decision Period:

It is found that the innovation was introduced immediately on becoming aware of the innovation. The two stages, namely, persuasion and decision stages had been skipped over. There was no time lag between the awareness stage and the adoption stage and hence the introduction of the innovation may be termed as hasty.

13. EVALUATION OF THE INNOVATION:

The innovation was introduced as a solution to a problem the existence of which was universally accepted. The innovation had been introduced by a very prestigious research institution, namely The National Council of Educational Research and Training and the State Institute of Education was also closely linked with the same. A considerable amount of money had been spent by the N.C.E.R.T. and the State Government on the training of teachers. There was a keen awareness of the need for the innovation. Yet the innovation had failed. While the innovation

was favourably evaluated with regard to four of the six factors namely relative advantage, compatability, observability and divisibility, it was very low on communicability and very high on another measure, namely, complexity. Teachers found it difficult to understand and use the innovation. The three day district level training courses were too short a duration for teachers to understand and assimilate the idea. Further, instead of one teacher being drawn from one school, it would have been better if a team of 6 teachers, one for each of the six subjects areas, had been oriented in the evaluation programme.

The innovation was not resisted at the earlier stage since it was thought that the S.S.L.C. Public Examination was going to be patterned on the objective based evaluation model and that they, as early birds, could catch the worm. Since no concomitant change was brought in the Public Examination, the innovation lost its value and meaning to the practitioners.

14. CONSEQUENCES OF THE INNOVATION:

The favourable consequences of the innovation were as follows: (1) Teachers got to know about the concept of objective evaluation. (2) Teachers became aware of the high degree of deficiencies of the present evaluation system. (3) Teachers got themselves introduced to the techniques of objective based evaluation. (4) Teachers learnt to analyse a question paper rationally. (5) Having understood the basis of behavioural

objectives in the evaluation process, they found it to have an indirect influence on their classroom teaching-learning situation.

The unfavourable consequences of the innovation were as follows: (1) The workload increased (2) Resistance to other innovations sought to be introduced manifested even at an early stage of the adoption process.

15. A CRITICAL APPRAISAL OF THE INNOVATION IN RELATION TO ITS OBJECTIVES:

The main objectives of the innovation were (1) to standardise the question papers and reduce subjectivity prevalent in the examination and to improve the classroom instruction by focussing the attention of the teachers on the objectives. Since the innovation had been discontinued, no standardisation of question papers on the basis of ^{of} objectives evolved. The school examinations continued to pattern itself on the model of the S.S.L.C. Public Examinations which remained as they were without being influenced by the innovation. The second objectives, though not fully achieved, might be considered to have been realised to a little extent since the training given in identifying the behavioural objectives had indirectly developed some skills in the teachers. But the result might not be commensurate with the time and money spent in making the teachers aware of the innovation.

CENTRE OF CONTINUING EDUCATION

1. INTRODUCTION:

"A Teacher can never truly teach unless he is still learning himself".

- Rabindranath Tagore.

The past few decades have seen great advances in the fields of Sociology, Psychology, Management and other disciplines which have exercised a great impact on Education, Schools and School Management. Curriculum changes take place frequently. It is necessary that the teachers are exposed to the new concepts and techniques developed in India and elsewhere. The NCERT has to discharge the function of dissemination of such new knowledge and techniques. It is assisted by the S.C.E.R.T to a certain extent. The Departments of Extension Services of the Colleges of Education are also entrusted with this function of spreading new knowledge. They can at best introduce the concepts and techniques to a few teachers in a region. The snow-ball theory ^{extended} newly gained knowledge to others.

2. THE CONTENT OF THE INNOVATION:

The innovation pertained to the conduct of inservice programmes for the benefit of teachers.

(a) Genesis of the Innovation:

The innovation had its genesis in the Teachers' Centres formed in the United Kingdom which the teachers in a neighbourhood visited to get inservice orientation in content and methodology, discuss classroom and school problems with other teachers to find solutions, use the common workshop to make teaching aids, prepare

work cards and such other materials as would promote the professional standards of individual teachers. It is purely voluntary for any teacher to go to Teacher Centres. The experiment has been reported to be successful and many countries have launched upon similar efforts. (Phi Delta Kappan, 1971).

The main features of the Teachers' Centres are:

(1) It is purely voluntary (2) It is available for use throughout the year including holidays. (3) It is easily accessible to teachers. (4) It has a good resources centre, including a mini-workshop.

The British Council in India has helped in Teachers' Centres being developed in a few schools with reputation for extension activities. Tamil Nadu has three such centres, one at Madras and two at Coimbatore.

(b) Description of the Innovation:

The innovation 'Centre of Continuing Education' had been promoted with the avowed objective of providing inservice and ancillary services to teachers continuously throughout the year.

The National Council of Educational Research and Training, New Delhi, had promoted the innovation and had established such centres in a number of states with the help and assistance of the State Governments. There were four such Centres of Continuing Education in Tamil Nadu, one each at Madras, Madurai, Karaikudi and Coimbatore. The Centre at Madras was attached to the State

Council of Educational Research and Training, Tamil Nadu and drew on the expertise available with the S.C.E.R.T. The two Centres at Madurai and Karaikudi were located in the Model Secondary Schools attached to Colleges of Education and drew resource persons from the Colleges of Education and the Arts and Science Colleges - under the same managements. The Centre at Coimbatore was independent of the Colleges of Education and had been selected in view of the Continuing Education Programmes the institution had been conducting voluntarily for over a decade. The Centre, in addition to its own staff, had taken the assistance of senior teachers of schools in its neighbourhood, faculties of two institutions of higher education under the same management, one a College of Technology and another an Arts and Science College, and the faculties of the three Colleges of Education at Coimbatore. The Centre at Madurai and Karaikudi had since been transferred to other places.

Each Centre had a Honorary Director, who was the Head of the institution and a co-ordinator. In some Centres, the two posts had been combined into one. The school office staff was used for the work of the Centre of Continuing Education.

The main function of the Centres of Continuing Education was to conduct about 24 courses in a year, each of 30 hours duration for about 50 teachers. It was, therefore, expected to orient 1200 teachers in a year. The courses were to be conducted 'after school hours' on week days and during day time

on holidays. The courses covered such areas as content, methodology of instruction, school management, organization of co-curricular activities etc. Programme of one of the Centres for 1980-81 is given in the annexure.

In addition to these courses, the Centres were expected to offer consultancy services to teachers who sought assistance with regard to their classroom problems. The school library, audio-visual hardware and software, the laboratory and workshop were also open for use of the teachers.

A third objective, enunciated by the National Council of Educational Research and Training, was to arrange contact programmes for teachers of schools undergoing correspondence cum contact B.Ed. programmes of the Regional College of Education. However, these contact programmes did not materialise in Tamil Nadu Centres as the Regional College of Education, Mysore did not plan for them at the Centres of Continuing Education and offered the contact programmes in its own place.

(c) Mechanics of the Innovation:

Teachers attending the courses were given tea and an allowance not exceeding Rs.3/- to cover their travel expenses. A sum of Rs.1,400/- per month was available for payment of remuneration to resource persons who assisted in these courses. Neither tea nor travel expenses were permissible for those who visited the centres for consultation.

: CS 4.5 :

The co-ordinator was eligible for an honorarium of Rs.300/- p.m. while a sum of Rs.330/- p.m. was provided for clerical assistance, ancillary services and menial assistance. The total allotment of Rs.59,400/- per centre was shared by the N.C.E.R.T. and the State Government on a 50 : 50 basis. It was found that the Centres were not able to utilize the full amount due to rigid rules and procedures. The accounts of the Centres of Continuing Education were audited by the N.C.E.R.T. and the State Government.

There was a State Level Advisory Committee for the Centres of Continuing Education. The Commissioner and the Special Secretary to the Education Department, Government of Tamil Nadu was the Chairman. The Director of School Education who was also the Director, S.C.E.R.T. was the Secretary. The N.C.E.R.T. was represented by the Field Advisor, N.C.E.R.T. Madras, the Principal, Regional College of Education, Mysore and one other nominee from NCERT, New Delhi. The heads of the various Directorates of Education, Tamil Nadu, a few Principals of Colleges of Education, Professors of Education, Madras and Madurai-Kamaraj Universities, a few teacher-members and the Honorary Directors of the Centres were the other members. The Advisory Committees approved the annual programmes for each year and forwarded the same to the NCERT which then approved the programme and released advance grants for the first four months. The Advisory Committee also reviewed the programmes conducted by the Centres and approved their annual reports and statements of accounts.

(d) Sample for Study:

The innovation was introduced in four centres. All the four centres comprised the sample. Further, five schools - two primary, two high school and one higher secondary school - studied in the neighbourhood of each of the centres were selected and the headmaster and four teachers from each of the schools were issued the questionnaire. ^{From} For Professors in Colleges, Four District Educational Officers and four Deputy Inspector of Schools were interviewed. The Field Adviser, N.C.E.R.T., Tamil Nadu was also interviewed.

(e) Documents Studied:

The following documents were studied: (1) The N.C.E.R.T. circular regarding the starting and functioning of the Centres of Continuing Education (2) The Government Order sanctioning the Centres of Continuing Education (3) Annual Reports and Statements of Receipts and Payments of the Centres for the year 1978-79 and 1979-80. (4) Proceedings of the meetings of the State Advisory Committee.

3. OBJECTIVE, DESIGN AND TYPE OF THE INNOVATION:

The main objective of the innovation was to form part of self-renewal exercises.

The secondary objectives had been: (1) to invent new ways of dealing with problems, (2) to reduce the gap between the current practice declared objectives, and (3) to fill a void in the existing system.

The innovation had been designed as an addition to a current practice.

The innovation was organisational in character though it had its ramifications on instructional and methodological practices.

4. AWARENESS OF THE INNOVATION:

The Government of Tamil Nadu issued a Government Order sanctioning the Centres of Continuing Education, authorising the absence of teachers in attending the courses conducted by the Centres as on duty and instructing the departmental officers to extend all assistance to the Centres. The Government Order was communicated to all the schools. The heads of schools thereby became aware of the existence of the innovation.

The honorary Directors of the Centres of Continuing Education communicated to the schools their annual programmes as soon as they were approved by the State Advisory Committee. Further, before each course commenced, the honorary directors requested the heads of schools to depute teachers to the course. A copy of the director's letters to the heads of schools was marked to the Inspecting Officers who also endorsed the request.

All the teachers became aware of the innovation only when they attended the courses for the first time. In the beginning of every course, the honorary director gave the salient features of the innovation and invited the participants and their colleagues to make the best use of the innovation.

The source of the innovation was the National Council of Educational Research and Training, New Delhi. The primary source of the British Teachers' Centre was not known to many except a few at Coimbatore and Madras.

The Centres started functioning in December, 1978 and teachers became aware of the innovation between December 1978 and March 1979.

The overall reaction to the idea of the teachers had been positive and most of the teachers considered it as a proven educational ideal. A few considered it to be helpful to them personally. None of them considered it as just an experiment.

5. ADOPTION OF THE INNOVATION:

Since this was a NCERT & State Government sponsored innovation, financed by them and bound by time factors and budgetary considerations, the innovation was straight way adopted for implementation.

The basic structure of the innovation could not be modified but there were variations in the programmes and procedures from centre to centre, based on the specific needs and problems of the area. While Madras, Madurai and Coimbatore are located in urban centres with over 100 schools within 10 km, from the centres. Karaikudi is situated in a rural areas, with hardly 5 to 6 schools in the neighbourhood of the Centre. While Madras and Coimbatore had been having orientation programmes for a long time through the British Council sponsored Teachers' Centres, the

extension services of the Colleges of Education, the Coimbatore Centre for Research and Studies which was the academic wing of the Association of Head Teachers of Coimbatore and other agencies like Mathematics Teachers' Association, Geography Teachers' Association, etc., teachers at Madurai and Karaikudi areas had been exposed to orientation programmes for the first time. Even at Coimbatore, when the programmes was extended to the neighbouring educational district where the teachers had no inservice programmes for a number of years, the teachers responded with great enthusiasm.

6. THE ADOPTER CONTINUUM:

The innovators were placed on the high extreme and the laggards on the low extreme of the linear continuum on the following characteristics of the adopters: (1) Social participation (2) Cosmopolite (3) Movement with his colleagues (4) Exposure to mass media (5) Knowledge of innovation (6) Empathy (7) Rationality (8) Attitude towards risk (9) Aspiration and (10) Opinion Leadership.

Likewise the norms of the innovation was reported to be modern. On the other hand, the laggards were on the high side of the linear continuum with respect to dogmatism. Table 1 presents (in the next page) the mobility of the adopter categories.

In the course of introduction of the innovation, a notable change had been reported among the teachers. They felt that they had a definite say in the formulation, design and conduct of the courses at the Centre whereas in the orientation courses

conducted by the Department of Extension Services, they had no influence on the nature of the courses. They felt they were meeting as equals instead of a teacher-student relationship found in the other courses.

TABLE 1 : THE MOBILITY OF THE ADOPTER CATEGORIES IN THE COURSE OF THE ADOPTION OF THE INNOVATION

From \ To	I	EA	EM	LM	L	TOTAL
I	37	12				49
EA		69	23			92
EM			94	35		129
LM				48	2	50
L					7	7
TOTAL	37	81	117	83	9	327

Upward : 72 (i.e) 22%

Downward Mobility: Nil

7. ROLE OF CHANGEAGENT:

The change agent was the National Council of Educational Research and Training. Some of the respondents had identified the Honorary Director and co-ordinator as the change agent. The

change agent had developed a need for change, established a change relationship with the teachers, created an intent to change in the teachers and helped the teachers to translate the intent to action.

The change agent had influenced some of the teachers only. While his role had been described as 'highly rewarding' and 'quite helpful', the change agent himself was considered to be 'friendly and understanding', 'persuasive', 'cosmopolite' and 'democratic'.

The change agent was higher in education, and status and his values were reported to be different.

8. ROLE OF OPINION LEADERSHIP:

Opinion leaders were reported to exist in the institution but they had not influenced the teachers in either way with regard to this innovation.

9. DISSEMINATION OF THE INNOVATION:

Since this was a funded, sponsored programme, no dissemination on the scale of the innovation was possible. However, it had been reported that study circles and faculty clubs had been formed by groups of schools in their areas.

10. CAUSES AND EFFECTS OF RESISTANCE:

Though no resistance to the innovation as such had been met, some resistance to the proces of ~~implementation~~ of the innovation was shown. One was with regard to the timing of the courses after school hours and on holidays. Teachers reported that, though they very much liked to take advantage of the courses, they were too tired after a hard day's job to catch a bus to the Centres, attend

the course for 2-3 hours and return home after 8 p.m. Further, the travel allowance limited to Rs.3/- did not meet the actual travel ~~cost~~ of some of the teachers who came to attend the courses from some distance. At one Centre, a modification was made with regard to timing, holding the courses in the afternoon. This was resisted by some heads of schools who thought it would affect normal work in their schools and who stopped deputing teachers. Crowding of courses during certain months was also objected to.

11. FACTORS FOR CONTINUANCE AND DISCONTINUANCE OF THE INNOVATION:

The innovation had not been discontinued at the time the study was made. Subsequently, the centres at Madurai and Karaikudi were shifted to others schools. On enquiry, the SCERT had reported that these two centres had catered to all the teachers in their area and hence the centres were shifted to other schools to cater to teachers in their areas. It was an authority decision for discontinuance of the innovation.

The Centre at Madras was run by the Department of Education. Further the expertise available with the SCERT had developed over the years an intimate contact with the clientele population. The teachers were also fully convinced about the need to update their knowledge . The innovation had therefore no factors contributing to ^{dis-}continuance.

12. THE MODEL OF CHANGE:

(a) The Process Model:

The innovation had the teacher in the central place and had been designed to assist him in solving problems. The user was the teacher and the need was given paramount importance. The role of

the change agent, namely, the NCERT, was purely that of a catalytic agent. The centres themselves had to utilise all their internal resources before going out for help. Though the NCERT played to a little extent a directive role with regard to budgetary allotments, it was purely non-directive with regard to the central core of the innovation. Hence the process model adopted is identified as the problem solving model.

(b) Strategy Adopted:

Though superficially it may appear that the strategy adopted was authority strategy in that the adopter had been directed by hierarchically superior persons, it may be noted there was no compulsion as such brought to bear on the schools to adopt the innovation. The value strategy where the adopter was viewed as a professional to whom an appeal might be made in terms of value priorities had been used to a larger extent.

Economic strategy had also been adopted by providing for honorarium and remuneration.

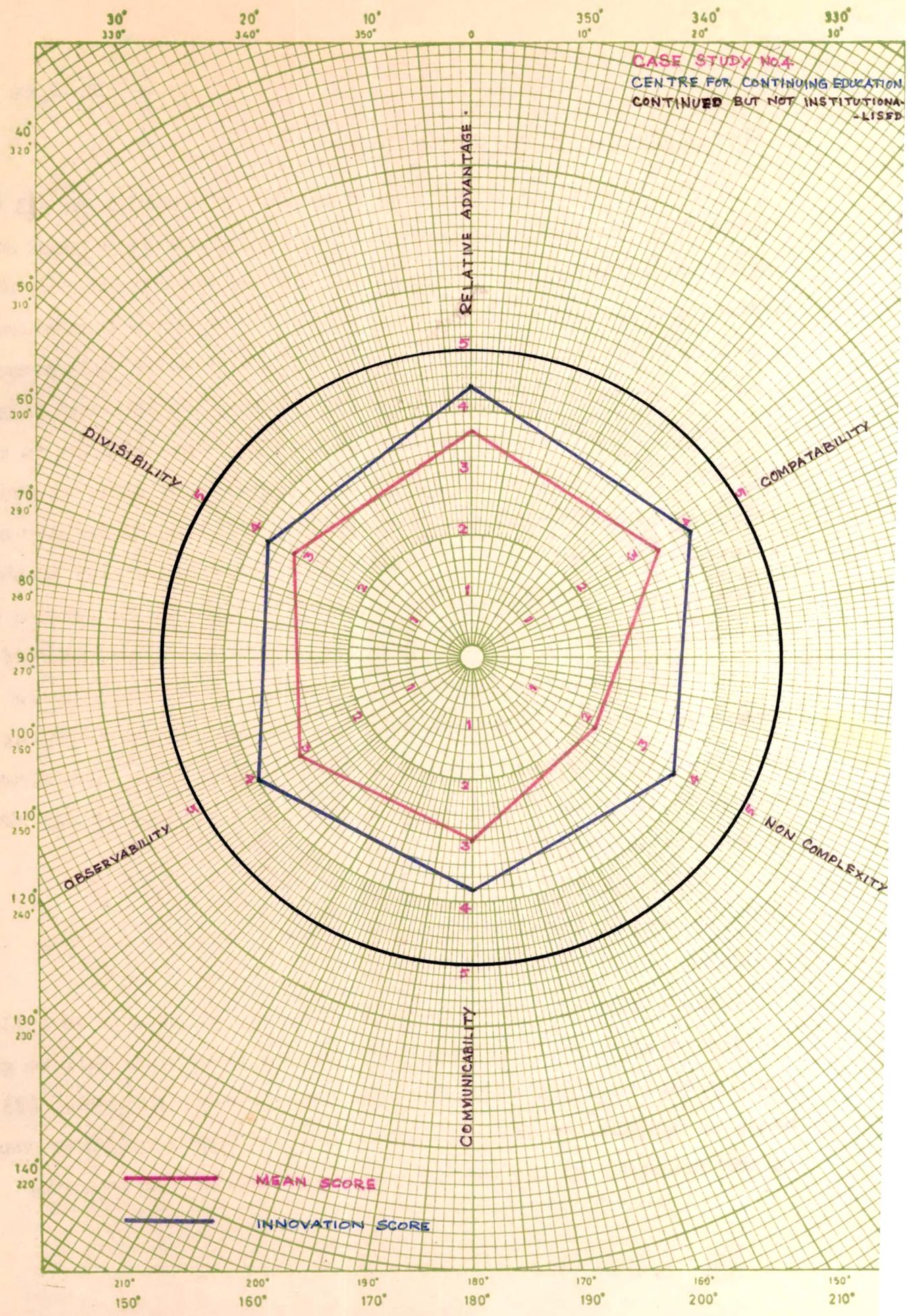
(c) Type of Innovation Decision:

The innovation decision had been made because the school had been asked to take up the innovation by the Government in its superordinate power position.

Hence the innovation decision was an authority decision.

(d) Innovation Decision Period:

The innovation was made aware to the adopters almost 18 months before the introduction of the innovation. Details of the innovation were supplied to the schools who were asked to submit a detailed application giving all data with regard to physical and man-power resources they were having. Hence there was quite a long time lag between awareness and adoption.



13. EVALUATION OF THE INNOVATION:

The innovation scored low on complexity and high on all the other five factors. The innovation was perceived as a sound one for the benefit of the client system and was consistent with the existing value and needs of the persons for whom the innovation was intended. The innovation was quite simple to be understood and put into operation. Actually, the innovation had been introduced as a pilot programme, on the success of which the decision to open the Centres of Continuing Education in each of the other districts was dependent. The constitution of study circles and faculty clubs in groups of schools also pointed out to the divisibility of the innovation. It also showed the ease with which the innovation could be communicated. The entry behaviour and terminal behaviour of the participants in the courses were measurable by the individuals themselves through self-evaluation, by the Centre of Continuing Education and by the institutions which deputed them. The strengths and weaknesses of the innovation were clearly visible to any other persons in the system.

14. CONSEQUENCES OF THE INNOVATION:

No unfavourable consequences of the innovation had been reported.

The favourable consequences of the innovation were as follows:
(1) According to the participating teachers, they were able to get their doubts with regard to the curriculum content cleared. (2) The heads of schools had reported that there had been a positive change in the behaviour of the teachers on their return from courses.

(3) Teachers became aware of the need for and the benefit of ~~separate~~ planning. (4) Teachers had openly given expression to their problems relating to curriculum, text books, etc., without any fear and they were transmitted to the authorities. (5) Talented teachers were identified whose services could be used for conducting courses, writing text-books, giving model lessons, etc. (6) Teachers got themselves acquainted with eminent faculty from institutions of higher education and this acquaintance had been well used for the benefit of the institutions in a number of ways like inviting them for talks to students in their schools, taking students to college laboratories to see and use equipments which were not available in the school, making use of the college librarians, etc. (7) The errors in the nationalised text-books were enumerated and sent to the text-book society directly. The revised versions of the text-books without much errors were thus made possible to the certain extent.

15. A CRITICAL APPRAISAL OF THE INNOVATION IN RELATION TO ITS OBJECTIVES:

The main objectives of the innovation were (1) to improve the professional competency of teachers (2) to identify innovative schools and develop them into institutions of excellence (3) to conduct inservice programmes throughout the year in a planned manner instead of offering them sporadically and (4) bring teachers in higher education into close contact with school teachers. From the statements of teachers, headmasters and inspecting officers, it was found that the Centres of Continuing Education had improved the professional competency of the teachers to a certain extent. The schools selected as the Centres had developed into better

institutions with improved libraries, better equipped faculty and other infrastructure. The courses were arranged the year around the consultancy sessions offered the teachers to get orientation at any time they liked. The college and university circulars brought in as subject experts realised the problems in schools and they not only began to appreciate the problem but lent a lot of supporting assistance from the various institutions by way of loaning of reference books, deputing their faculty to ~~content~~ ^{conduct} special courses and offering such other assistance as would reduce the degree of the difficulties of school teachers. The innovation may therefore to considered as to have achieved its objective to a large extent. It is only surprising that the innovation had not spread to other districts.

A n n e x u r e

CENTRE FOR CONTINUING EDUCATION

SARVA JANA HIGHER SECONDARY SCHOOL : PEELAMEDU : CBE-4.

PROGRAMME FOR THE YEAR 1979-80

A. ORIENTATION COURSES (Each Course of about 30 hours duration)

1. Higher Secondary Schools:

1. Development of Programme for arranging practical work in Zoology and Botany.
2. Orientation Course in Modern Tamil Literature.
3. Development of in-plant training programme for Vocational Courses.
4. Development of evaluation tools in vocational subjects.
5. Development of programme for arranging practical work in Physics and Chemistry.
6. Preparation of Unit tests for Stds. XI and XII in various subjects.
7. Teaching strategies in Mathematics.
8. Instructional materials in Economics.

2. High Schools:

1. Socially Useful Productive Work.
2. Environmental approach and curriculum for middle schools in a) Tamil (b) Geography (c) Science
3. Evaluation instruments in English.
4. Classroom management and climate
5. Instructional materials in Geography
6. Curricular materials in History based on Patch-work approach
7. Programmes for the gifted.
8. Reading and speaking skills in English for High Schools
9. Writing skills in English for middle schools
10. Programmed instructional materials for slow learners in Maths, Science, History and Geography for Std.X.

3. Primary Schools:

1. Teaching Aids for Science.
2. Reading and speaking skills in Tamil.

4. Headmasters:

1. Case study and simulation approach
2. Management by Objectives
3. O & H techniques in Schools
4. Management of Resources.

B. CONSULTANCY SERVICES (Daily between 4 PM to 6-30 PM)

1. Syllabuses of various subjects.
2. Teaching techniques
3. Classroom Management.
4. Sharing of library, laboratory and Workshop facilities.

Consultancy through correspondence will also be available to the extent possible.

C. CONTACT PROGRAMMES

1. Special lectures for Madras and Madurai University Courses for bonafide teacher candidates.
2. Contact classes for B.Ed. (Summer cum Correspondence Courses) of the Regional College of Education, Mysore.

CASE STUDY No.5

- | | | | |
|--|---|----------------------------|-----------------------------|
| 1. Name of the Innovative Practice | :: College Complex | | |
| 2. Type of Innovation | :: Organisational | | |
| 3. No. of schools reporting the innovation | :: About 600 | | |
| 4. Agency introducing the innovation | :: State Government | | |
| 5. Change Agent | :: Department of Education | | |
| 6. Opinion Leaders | :: Teachers' Unions | | |
| 7. Resisters | :: Internal to the system
College teachers | | |
| 8. Causes of Resistance | :: Insecurity, Loss of Prestige | | |
| 9. Stage of Innovation | :: Discontinued in most schools
and continued in some. | | |
| 10. Process Model of change | :: Problem Solving Model | | |
| 11. Type of Decision | :: Authority Decision | | |
| 12. Types of strategy | :: Authority, didactic and
economic strategies. | | |
| 13. Time lag | :: 2 - 12 months between
awareness and adoption | | |
| 14. Evaluation | :: <u>Factors</u> | <u>School
TEACHERS</u> | <u>College
TEACHERS</u> |
| | Relative Advantage | Medium | Low |
| | Compatability | High | Low |
| | Complexity | High | High |
| | Divisibility | High | High |
| | Observability | High | High |
| | Communicability | High | High |
| 15. Size of Sample for Study | :: 20 Schools and 10 Colleges. | | |

C O L L E G E C O M P L E X

1. INTRODUCTION:

A survey undertaken by an agency of the UNESCO has revealed that the classrooms in India are being utilised only for 78% of the school time and that the laboratories in the schools are very much under-utilised to the extent of 84% that ^{is} this, the laboratories are just used only for 16% of the school time (Asian School Buildings Organisation, 1973). Another survey undertaken in Tamil Nadu has also shown that much of the facilities available in the schools were minimally used and that some of the equipments had not been used even once in the course of a period of three years (Dhandapani, 1971). In a developing country, optimal utilisation is very much needed. Sharing of equipments and facilities available should not only reduce the capital costs in education but bring about fruitful interaction among institutions. The introduction of higher secondary education has necessitated a closer link between colleges and schools. The College Complex scheme was an effort to put into greater use the existing facilities in the form of manpower and physical resources and build a liaison between the school system and the college system.

2. THE CONTENT OF THE INNOVATION:

(a) The Basis of the Innovation:

Taking note of the absence of any co-ordination between educational institutions functioning at different levels of education, the Education Commission 1964-66 recommended that each higher stage of education should take the responsibility of improv-

standards at the lower stages. The Commission had suggested a few programmes to be undertaken for improving the efficiency of the school system (1) Each college can be functionally related to a number of secondary schools in the neighbourhood and enabled to provide extension services and guidance to them to improve their standards. (2) The universities can conduct special diploma courses, either pre-service or in-service, for improving the competency of secondary teachers, preferably through correspondence courses requiring only short-term personal attendance. (3) The universities can conduct experimental secondary or primary schools to evolve improved techniques of teaching and organisation (4) The Universities and college teachers can take upon themselves the responsibility of improving school text books and providing better types of instructional materials. (5) The Universities and colleges could select talented students from the schools in different subjects at an appropriate stage, say, in the age group 13-15, and help them to develop their knowledge in special fields through individual guidance, provision of laboratory facilities etc., over and above regular school work. The Education Commission has also recommended the formation of school complexes in a like manner and has specified in greater detail the functions and modalities of the school complexes, which hold equally good for college complexes.

(b) The Description of the Innovation:

The Higher Secondary (Plus Two) course was introduced in the schools in Tamil Nadu in 1978. The laboratories for many of the upgraded schools were not completed. Many of the teachers

were inducted from among the graduate trained teachers working in schools. These were the two immediate problems that faced the Higher Secondary Schools. With the withdrawal of the Pre-University courses from the colleges, the college laboratories became free and some college teachers were rendered surplus. Hence the college complex scheme came into existence with about 5 to 6 Higher Secondary Schools attached to a college. Students went to the colleges to do the practicals, and guest lectures for students and teachers were arranged. Further refinement of the scheme took place in some of the complexes. The main objectives of the college complex scheme may be summarised as follows:

(i) Student Development: (a) To place the spare facilities available in the college for the benefit of students of Higher Secondary Schools and (b) To arrange guest lectures for the benefit of students by College teachers.

(ii) Teacher Development: (a) To arrange special lectures on different topics for the school teachers by college teachers. (b) To assist the graduate teachers to acquire post-graduate degrees and (c) To loan reference books to teachers.

(iii) School Development: (a) To plan and arrange school laboratories (b) To guide in the purchase of laboratory equipments (c) To loan or transfer equipments rendered surplus on account of closure of Pre-University course to the higher secondary schools. (d) To make available the library facilities to students and teachers through institutional lending (e) To plan and conduct N.S.S. activities with the collaboration of college students and

(f) To help higher secondary schools in the proper selection of teachers by serving on selection committees.

The Government issued necessary orders in this regard. To meet the recurring expenses on chemicals, energy and other incidentals, schools were permitted to pay the colleges at a rate not exceeding Rs.20/- per student. Any expenditure incurred by the colleges over and above this sum was declared as permissible for government grant. Travel expenses of students and teachers of schools were also permitted to be incurred from school funds. The College complex scheme was later extended in February 1980 to Polytechnics and Colleges of Technology to cater to the needs of Vocational courses in the schools.

(c) Sample for Study:

The innovation, according to departmental authorities, was introduced in more than 600 schools and about 100 colleges were involved. 20 schools and 10 colleges were ^{selected} related as samples for study. Questionnaires were issued to the 20 headmasters and 180 teachers in the schools and 10 Principals and 60 Professors in the Colleges. All the headmasters and Principals to whom questionnaires were issued were interviewed. Besides, three teachers from each school and 12 Professors were interviewed. Two Chief Educational Officers and four District Educational Officers were also interviewed.

(d) Documents studied:

The following documents were studied: (1) The Government Orders issued with regard to the College Complex Scheme. (2) The circulars issued by the Director of Collegiate Education to the

Colleges (3) The circulars issued by the Director of School Education to his subordinate officers and schools (4) The circular issued by the Director of Technical Education to the Polytechnics.

3. OBJECTIVE, DESIGN AND TYPE OF INNOVATION:

The objectives of the innovation were (1) to invent new ways of dealing with problems and (2) to fill a void in the existing system. The innovation was designed as an addition to the current practice. It was organisational in character with impact on instruction and methodology. Though the innovation was expected to cover all subjects in higher secondary courses, it was confined mostly to mathematics and science. In one college, economics was also covered under the scheme.

4. AWARENESS OF THE INNOVATION:

At school level, many of the practitioners were aware of the basis of the innovation as early as 1962 when the department of education launched the school complex system in a large number of high schools. At the college level, the Principals and teachers became aware of the innovation at different times, namely, (1) when the heads of higher secondary schools approached them, seeking laboratory facilities between July 1978 and August 1979 or (2) when the Chief Educational Officer sought their co-operation in building college complex system, which happened between October 1978 and January 1979 or (3) when the Director of Collegiate Education assigned higher secondary schools to each of the colleges which was in August 1979.

The Government Order regarding College Complex Scheme was issued in September 1979. Only one of the college Principals was aware of the recommendations of the Education Commission. Most college teachers identified the Government as the source of the innovation. The reaction of the college teachers to the innovation ranged from positive to negative, while the reaction of school teachers was positive. The impressions of college teachers about the innovation were (1) This was just an experiment and (2) This was not practicable. On the other hand, the school teachers held the opinions (1) This was a proven educational ideal; (2) This was just an experiment and (3) This was necessary in the context in which the schools were placed.

5. ADOPTION OF THE INNOVATION:

The practitioners got interested in the idea at different time intervals (1) immediately on becoming aware of it, (2) a few months after and (3) long after. The time interval between awareness and interest stage ranged from 0 to 12 months. The adopters were motivated by the following factors.

(a) College teachers: (1) It was given from above. We had no options (2) It was a probable solution to the problem faced (3) Its novelty was appealing (4) It gave us an opportunity to know what was happening in higher secondary schools.

(b) School teachers: (1) It was a probable solution (2) It would in the longer run pay dividends. (3) It was practised by other schools. (4) It was given from above. There was no option. (5) ~~Without~~ the infrastructure available in the school, there was no other go.

While the college teachers made no attempt to gather details of the innovation, a few Principals sought clarifications from the Director of Collegiate Education with regard to (1) the expenditure incurred on the practicals conducted by school students (2) absence of College teachers going to schools for guest lectures etc., (3) Payment of remuneration/honorarium to teachers and attenders for working on holidays and out of college hours. The reasons for not collecting any details about the innovation were given as (1) the idea was clear enough (2) It was somebody's job (3) It would clear up as and when we implemented the idea. An element of lukewarm attitude to the innovation was discernable among most college teachers. The school teachers collected further information from (1) other schools and (2) the departmental officers.

While most schools' teachers opined that (1) the objectives were worthwhile (2) there was a need for the innovation and (3) the idea would work, some teachers continued to be skeptic about the innovation. They were not confident about getting the necessary co-operation from the colleges. Most colleges teachers were not convinced about the need for the innovation as they felt that the Government should have introduced the higher secondary courses only in Colleges. If it had to be in schools, the Government should have provided the necessary infrastructure in schools before they upgraded the schools. The Directorate of School Education was very enthusiastic in spreading the idea. The college Principals generally convened a meeting of the heads of departments and conveyed to them the intention of the government. They were asked

to render possible assistance to schools as and when headmasters and teachers of higher secondary schools approached them.

The skepticism of the college teachers could be seen from their negative responses to the statements (1) They agreed with its objectives (2) They felt the need for innovation (3) They knew how they would have to change and (4) They believed it was worthwhile to do this. The school teachers made positive responses to the above statements as well as to the statements, (1) They believed that it would work here and (2) They had a clear picture of what it was about. Both college and school teachers responded negatively to the statement "They believed the idea should be given the top priority". The innovation had not been institutionalised in any of the college or schools. It was being continued in a few schools, discontinued in some and readopted after discontinuance in others.

6. THE ADOPTER CONTINUUM:

The innovators were placed on the high side and the laggards on the low side of the linear continuum on 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. It was the other way about with regard to dogmatism. The innovators were considered rather modern than traditional in their norms. There had been no considerable change in the distribution of the adopter categories in the course of the adoption of the innovation,

as Table 5.6 will show. No study of mobility could be made with regard to college teachers since particulars were not made available.

TABLE 5.6 : THE MOBILITY OF ADOPTOR CATEGORIES IN THE COURSE OF ADOPTION:

From To	I	EA	EM	LM	L	TOTAL
I	29	2				31
EA		98	5			103
EM		4	198	12		214
LM			13	11		24
L						-
TOTAL	29	104	216	23	-	372

Upward Mobility : 17

Downward Mobility: 17

7. THE ROLE OF THE CHANGE AGENT:

The Change Agent has been identified as the Education Department, represented by the Director of Collegiate Education with regard to Colleges and by the Director of School Education with regard to schools. The Director of Collegiate Education acted as a passive change agent, limiting his activity to communicating the Government Order and assigning schools to Colleges. No effort to stabilise change or prevent discontinuance was taken by the change agent. The Director of School Education, however played a dynamic role as change agent. He assisted the schools in (1) developing a need for change (2) stabilising a change relationship (3) creating an intent to change (4) translating the intent to action and (5) getting the administrative and financial support to the scheme. He was "quite helpful" to the schools in implementing the innovation. Through his frequent circulars and reviews of the progress, he had identified the problems faced in the implementation of the innovation and had acted to solve them. Both change agents had been marked "higher" with regard to education and status. The change agents experienced the greatest influence on the practitioners.

8. ROLE OF OPINION LEADERSHIP:

Opinion Leaders were reported to exist in the institutions, but they did not seem to have influenced the practitioners with regard to this innovation. The Association of University Teachers exercised a great influence on a large number of college teachers, and that association was not in favour of linking plus two to schools. The members of the association adopted a luke-warm attitude

towards the innovation. Professors and Principals of Colleges who were not members of the Association of University Teachers were more cooperative.

9. DISSEMINATION OF THE INNOVATION:

Since the innovation was departmentally sponsored, no effort was made on the part of the practitioners to disseminate the innovation. But one of the change agents, the Director of School Education was very earnest to disseminate the innovation to all the higher secondary schools. The Chief Educational Officers visited the schools and exercised their influence over them to implement the innovation.

10. CAUSES AND EFFECTS OF RESISTANCE:

No open resistance to the innovation was reported, but some indirect resistance was reported. Though the innovation was a departmentally sponsored one, two directors of education were involved in the implementation of the innovation. The Director of Collegiate Education was not much enthusiastic about the scheme. This was evident from the following facts:

(1) The inordinate delay in complying with the request of the Director of School Education to instruct colleges to associate themselves in the complex. (2) Without consulting the Directorate of School Education, the complexes were formed, leading to a lot of confusion. Some schools were assigned to far away colleges while they had a college in their own ^{town} ~~town~~. (3) An exorbitant sum was fixed by the Director of Collegiate Education to be paid by the schools to colleges as laboratory fees. (4) No order was

issued permitting the college teachers to give guest lectures. No reason for the covert resistance of the Director of Collegiate Education was discernable other than personal factors.

The Association of University Teachers had desired that the plus two course should be linked to colleges for the following reasons (1) Teachers would be thrown out of their jobs from Colleges on closure of Pre-University classes. (2) As an entrance qualification for professional and other higher education, plus two stage required care and nurture which it believed could be provided only in colleges. (3) It would involve additional workload for college teachers. The private college managements also opposed plus two being attached to schools for (1) the Pre-university was the milch-cow of higher education and provided money to finance the huge deficits in the under-graduate and post-graduate programmes. (2) The hostels built at huge cost would become vacant to a large extent, resulting in loss of income. Because of these factors, the colleges, especially the privately managed colleges, were reluctant to offer any facilities to higher secondary schools. When compelled by the Government, they demanded huge laboratory fees which the schools could not afford to pay. The resistance from the college teachers was govt over by (1) making it clear that there would no rethinking on delinking plus two course from colleges (2) involving mainly government colleges in the college complex scheme (3) providing handsome remuneration to college teachers and laboratory assistance^{ts} for their extra work and (4) allowing any deficit expenditure in the operation of the scheme as permissible for 100% aid from government.

There was no resistance as such from school teachers, but they had a few difficulties like travel expenses, arranging practicals at odd hours and on holidays, unrest in colleges leading to cancellation of practicals, etc., These were not sufficient causes to develop any resistance to the innovation.

11. FACTORS FOR CONTINUANCE OR DISCONTINUANCE OF THE INNOVATION:

It has been reported that the innovation had been discontinued in 16 out of 20 schools taken up for study, continued in 3 schools and readopted after discontinuance in one school. Out of the 10 colleges taken up for study, the scheme has been discontinued in 8 colleges and continued in 2 colleges. Even in those two colleges, out of the 11 schools originally allotted to the colleges, only four schools came for practicals. While originally all the schools were using all the four laboratories, namely, Physics, Chemistry, Botany and Zoology, at the time of study only one school was using all the laboratories while the other three schools were making use of one or two of the laboratories. It was also further reported that the use of the college laboratories were being confined only to a few practicals while in the beginning schools were sending students to colleges for all the practicals. It was also seen that only Twelfth standard students availed of the facilities in colleges whereas both eleventh and twelfth standard students were deputed to colleges for practicals in the first two years.

The reasons for total discontinuance or partial discontinuance of the college complex innovation were that the laboratories in the school had been made ready and there was no need for sending students to colleges for practicals except when some facilities were lacking in the school laboratory.

The reasons given out for continuance of the innovation were: ~~were that in the college laboratories,~~ (1) The school laboratory building was not yet ready. (2) One full section of students could do the practical at a time in college laboratories, while in the smaller school laboratories, one third to one-half of the section alone could be provided work at a time. This necessitated additional batches which, even when arranged out of the school hours, could not be provided in the school laboratories. Further, there was difficulty in engaging the students who did not have practicals during a period. (3) The schools were not sanctioned posts of laboratory assistants, whereas the colleges with a number of laboratory attenders were able to arrange practicals without much difficulty. (4) Difficulties in procuring samples of plants and animals for botany and zoology practicals. (5) "When better facilities are available without any difficulty, why should we not avail them?" attitude was prevalent. (6) 'Exposure to college atmosphere was desirable' was another reason.

The reasons given out by the school which readopted the innovation after discontinuance were: (1) The increased intake of students into the plus two necessitated additional facilities. (2) Difficulties with the gas plant in the chemistry laboratory.

(3) Lack of laboratory attenders to make preliminary arrangements for practicals for large number of students.

12. MODEL OF CHANGE:

(a) Process Model:

The innovation was born as a solution to the problems the schools faced on the introduction of the plus two courses, namely (1) Lack of physical facilities in the school and (2) need for training of teachers in schools. The change agent, namely the department of education had mostly initiated the change process though in a few cases, the receiver, namely, the school, had also initiated the process of change. But in either case, there was full involvement of the receiver in effecting the change. There were other alternatives such as transfer of equipments rendered surplus, transfer of surplus teachers, but these were evaluated and found not practicable and prone to administrative and personnel problems. The college complex scheme was chosen the best among the alternatives. Hence the process model was the problem solving model.

(b) Strategy Model:

With regard to the school teachers, they were convinced of the need for the innovation as they were faced with a fait accompli, i.e., the introduction of plus two. They had to be given instructions as to how to proceed further. Hence, by specifying in detail the modalities of the college complex scheme, didactic strategy was found to be followed. Being a departmentally sponsored innovation, authority strategy was also discernible. With regard to college teachers, authority strategy was predominant.

as governmental directive had to be issued to colleges to provide facilities to the schools. However, an element of economic strategy was also adopted by offering honorarium and remuneration to the college teachers and staff participating in the innovation.

(c) Type of innovation-decision:

The decision to initiate, introduce and implement the innovation was purely an authority decision. Even where some initiative was taken up by schools to avail of the facilities in the colleges, it could be successfully implemented only when the governmental directive came.

(d) Innovation Decision period:

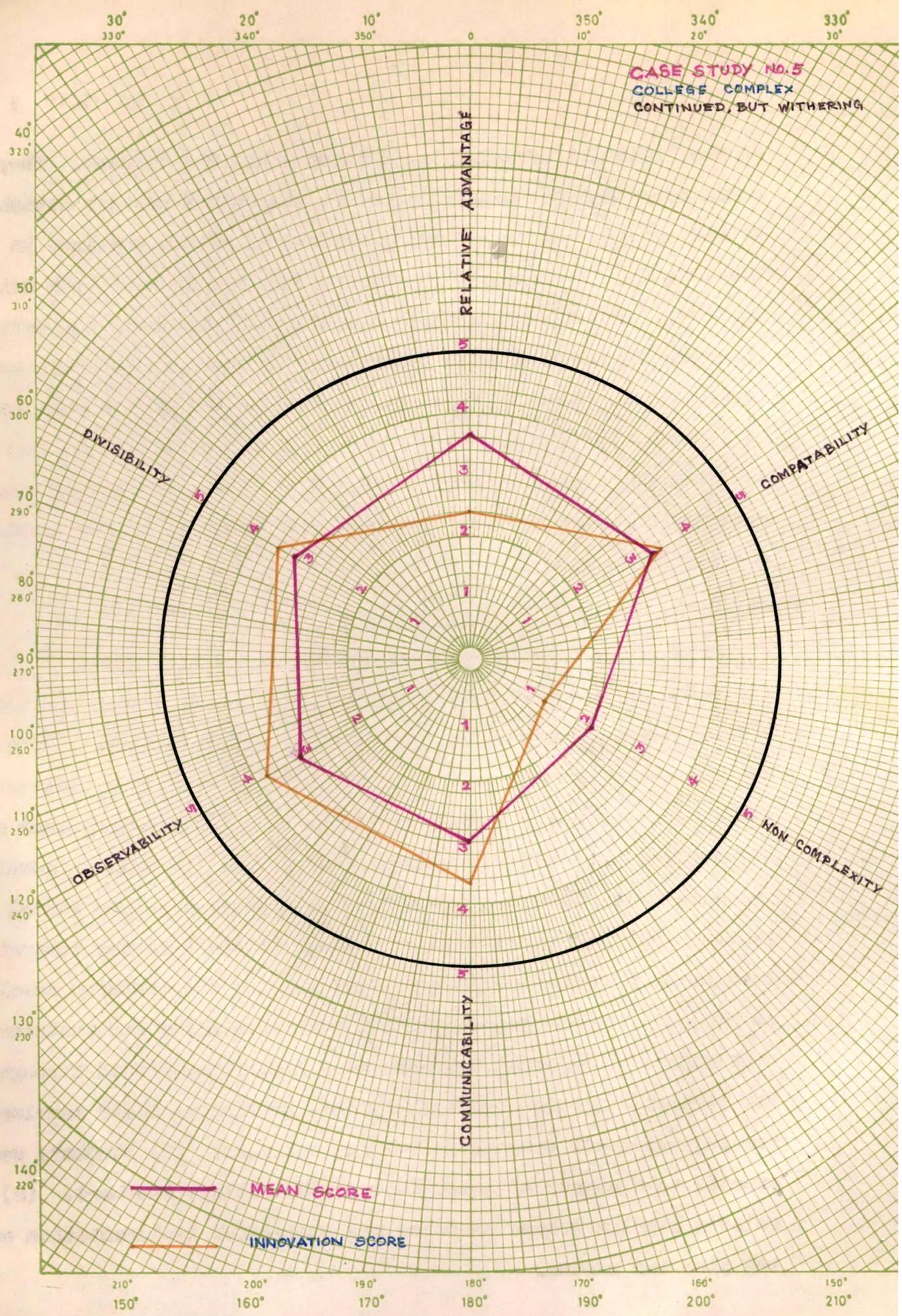
The time of awareness of the innovation with regard to school teachers ranged from 1962 - the year when the school complex system was pioneered to 1978 when the guidelines for implementation of the higher secondary education was issued to schools. The college principals and teachers became aware of the innovation between July 1978 and March 1979. Time of adoption ranged from September 1978 to August 1979. The Innovation-decision period ranged from 2 months to 12 months. The time lags between the stages of the adoption were quite sufficient.

13. EVALUATION OF THE INNOVATION:

Just like for other aspects of the innovation, there were two different evaluations of the innovation - one by the college teachers and the other by school teachers. While both groups gave favourable scores with regard to the divisibility, communicability, and observability of the innovation, the college teachers gave low scores

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CASE STUDY NO. 5
COLLEGE COMPLEX
CONTINUED, BUT WITHERING



on the 'relative advantage' and 'compatibility' factors. They considered that the higher secondary stages was wrongly attached to the schools and that, having decided to attach the same to the schools, the necessary infrastructure should have been built up in the schools before their upgradation. To them, the better alternative was to provide facilities for students in their own institutions. Both college and school teachers gave a high score on 'complexity' factor, due to the practical difficulties they faced in the implementation of the innovation. The school teachers gave medium score on 'relative advantage' factor and favourable score on 'compatibility' factor.

14. CONSEQUENCES OF THE INNOVATION:

The favourable consequences of the innovation were:

(1) The much stressed linkage between the school system and the higher education system was formed to a certain extent. (2) The college faculty, other than those in teacher education institutions involved themselves for the first time in a massive programme of orientation courses for school teachers. (3) The college faculty began to understand ^{and} appreciate the strengths in the school system. (4) The association of college teachers in the laboratory management of schools was very helpful. (5) The contacts developed at the time of orientation courses were maintained and sustained ever since. (6) School teachers were richly benefitted through the contacts with the college teachers leading to their enrolment for post-graduate courses in evening colleges. (7) Students were exposed to a number of guest lectures by college teachers. (8) The college complex scheme hastened the successful implementation of the ten plus two scheme.

The unfavourable consequences of the innovation were:

(1) A lethargic attitude developed among a few schools in building their own facilities. (2) The cost of college complex scheme left no money for schools to provide for any laboratory work in their own schools. (3) The indirect cost to teachers and students due to travel and food had to be met by themselves in most cases.

15. A CRITICAL APPRAISAL OF THE INNOVATION IN RELATION TO OBJECTIVES:

The objectives of the innovation were (1) to optimise the utilisation of the infrastructural facilities available in colleges (2) to bring in a closer coordination between schools and colleges and (3) to improve the qualitative standards of schools teachers. The innovation had been short-lived and its life had limited itself to the time by which the necessary infrastructural facilities were developed in the schools themselves. No transfer of surplus equipment or staff from colleges to schools took place even in Governmental institutions. It was found that a large amount of laboratory equipments meant for P.U.C. were dumped in lumber rooms in several colleges. At the same time, the same equipments were being purchased at prohibitive cost by schools. It is therefore found that the objective of optimisation of existing facilities did not materialise. Though schools and colleges were brought together, an everlasting relationship could not be built due to the existing rules and regulations. A more progressive attitude to deputation outside the college was lacking. Similarly, the schools were

: CS 5. 19 :

unable to develop in-built plan to make use of the college staff and facilities on a permanent measure. The orientation programme for school teachers started with much fan-fare collapsed due to faulty curriculum management. Hence the laudable objectives of the College Complex Scheme had not been realised though the innovation in the shorter run helped the stabilisation of higher secondary courses.

CASE STUDY No.6

1. Name of the Innovative Practice :: Compulsory Physical Education Programme
2. Type of Innovation :: Organisational
3. No. of schools reporting the Innovation :: All high schools and selected higher elementary schools
4. Agency introducing the Innovation :: State Government
5. Change Agent :: The Department of Education
6. Opinion leaders :: Colleges of Physical Education, Physical Education Association
7. Resisters :: None
8. Causes of resistance :: --
9. Stage of Innovation :: Discontinued
10. Process Model of Change :: Research, Development and Diffusion Model
11. Type of Decision :: Authority Decision
12. Type of Strategy :: Authority, value and psychological strategies
13. Time lag :: No time lag between conception and awareness
14. No time lag between awareness and adoption.
14. Evaluation of the Innovation:
 - Relative Advantage : High
 - Compatability : High
 - Complexity : High
 - Divisibility : Medium
 - Observability : High
 - Communicability : High
15. Sample for Study :: 20 Schools.

COMPULSORY PHYSICAL EDUCATION PROGRAMME
(Physical Education Evaluation Programme)

1. INTRODUCTION:

The Report of the International Commission on the Development of Education, more commonly known as Paure Report, says "It is readily agreed that physical education should go beyond the exercise of muscle and nerves and reflect that which is its primary concern. But stress is generally given to the value of the competitive spirit and the relation between physical exercise and character-building is moreoften asserted than demonstrated. Essentially people should learn to adopt fully to their bodies, the basic foundation of personality. Physical Education suffers less from theoretical inadequacies than from the general indifference which in practice, is still far too prevalent" (Faure et al, 1973). The prevalent practice of assessment of students through their performance in competitions classifies students into two categories: (1) do-gooders and (2) not suited for games and athletics and thus neglects the aspects of individual growth in persons. This method has not only driven a majority of students away from physical education but failed to take note of one of the main objectives of physical education, namely, "to develop within each student an acceptance of his own physique and to use it as effectively as possible." (Metzher, 1974). Hence a programme for proper evaluation of students with regard to physical education was evolved in Tamil Nadu for filling in the inadequacies of the existing system. Though the innovation was termed as "Compulsory Physical Education Programme" by the department, it is more a 'Physical Education Evaluation Programme', for physical education has been compulsory

in schools in Tamil Nadu for over half a century and what was attempted at was only evolving criteria for evaluation of students in physical education.

2. CONTENT OF THE INNOVATION:

(a) Evaluation in Physical Education:

Evaluation is an estimate of progress towards a known goal. It is a necessary step in the continuous process of learning. Evaluation may be accomplished through precise, objective measurement or through subjective measurement. It may be used informally, to review daily progress in class, or more formally, to assess long-term progress. Precise measurement of certain outcomes in Physical Education is possible, such as increase in height and weight, improvement in physical fitness and motor skill tests which can be determined objectively. Age norms for physical growth and physical performance tests are available. Less precise than measures of physical growth and motor development are the many devices for estimating progress toward emotional maturity and social adjustment. Certain caution is necessary in setting up and administering any testing programme. Test results should be used to guide individual pupils and not just to classify them.

(b) The mechanics of the Innovation:

The annexure to the government order implementing the innovation specifies two objectives for the innovation (1) improving the physical fitness of pupils in schools and (2) making the pupils sports-conscious. The departmental handbook, however, spelt out in greater detail the "Objectives of the evaluation programme to include the following: (a) to help the teachers

and administrators in assessing the performance and progress of the students in Physical Education. (b) To motivate students to participate whole-heartedly, specially when there appears to be a levelling off their interest in the instruction and also to help the teachers to programme their instructions according to time and condition. (c) To help students in evaluating their own performance in different physical education activities. (d) To enable the teachers to objectively measure the improvement, by testing before and after the unit of instruction. (e) To help the teachers and administrators to identify correctly, the limitations and merits of the programme of Physical Education. (f) To aid the teacher in evaluating the different methods of instruction. (g) To provide means to determine the better performance within a group and to gain insight regarding the potential ability of others. (h) To provide a strong basis for a scientific classification of players and teams for practices and competitions. (i) To diagnose individual needs regarding fitness, body mechanics and motor skills. (j) To determine norms, according to age, sex and groups within a school or District or State, as well as for comparison with norms developed in other States and countries. (k) To determine the status and change caused by physical education programme in physical fitness. (l) To provide data required for future Research workers. (m) To determine the relative values of sports activities with reference to their contribution to the desired objectives and (n) To help the teacher to evaluate his own teaching effectiveness.

The innovation was to be implemented in standards 6 to 11 (old pattern) in all high schools and in standards 6 to 8 in such upper primary schools (Higher Elementary schools) as had physical education teachers. All high schools in Tamil Nadu had physical education teachers. The schools were classified into three categories (1) Schools with adequate play area (2) schools with limited play area and (3) schools without any play area. Separate sets of physical education and games activities were provided for each of the categories. While the physical fitness tests comprising of a battery of 7 tests and yoga asanas were common for all the categories, the field games varied from category to category. In the place of major games provided in schools under the first category, additional yoga asana exercises and gymnastics which did not require extensive play area were prescribed for the other two categories. Norms for evaluation of the various skills were spelt out in unambiguous terms in great detail. A handbook running to over 200 pages was issued to each and every physical education teacher in all schools. Physical education was made a subject of examination and students' performance therein was to be taken into consideration for deciding annual promotions of students from standard to standard. The evaluation had two parts (1) practical: 74 marks (2) theory (a) written examination 20 marks (b) sessional 6 marks. Total 100 marks. The minimum for pass was to be fixed by the schools themselves. ~~The minimum for pass was to be fixed by the schools themselves.~~ The Government Order had also instructed the Director of School Education to send to the Government for their approval

a specimen of 'Certificate of Merit for Physical Education' to be issued to students scoring 85% and above in physical education in standard 11. No such certificate had been issued to any student nor could it be ascertained whether such a certificate was designed.

(c) Sample for Study:

The innovation was introduced in all the high schools and in such higher elementary schools as had physical education teachers. Nineteen high schools and one higher elementary school were chosen to constitute the sample for study. The questionnaire was collected from 20 headmasters, 40 physical education teachers and 140 other teacher-members of the 'Physical education and Internal Assessment' Committee constituted in each school. Three Regional Inspectors of Physical Education and three District Educational Officers were interviewed. All the heads of schools and three teachers from each of the schools were also interviewed.

(d) Documents and record studied:

The following documents and records were studied to understand and analyse the innovation: (1) G.O. Ms. No.793 Education dated 19th May 1975. (2) Syllabus in Physical Education for standards VI to XI published by the Government of Tamil Nadu. (3) Handbook on Physical Education (Tamil Nadu Text Book Society, 1975). (4) Forms and Registers prescribed by the Chief Inspector of Physical Education (5) Mark registers maintained in schools (6) Principles of promotion formulated in schools during the period 1976-80.

3. OBJECTIVE, DESIGN AND TYPE OF THE INNOVATION:

The objectives of the innovation were stated to be (1) to change the customary usages and practices (2) to invent new ways of dealing with problems (3) to redefine existing problems and recognise new ones and (4) to form part of self-renewal exercise. The innovation had been designed by restructuring the existing practice. It required elimination of old behavioural patterns and habits. The innovation had been mainly organisational in character though it had an impact on the methodology. While all students were involved in the innovation, between 21% to 80% of the teachers only were involved in the innovation.

4. AWARENESS OF THE INNOVATION:

The government order was issued in May, 1975 and Orientation courses for Physical Education Teachers were conducted between September and November 1975. Though the practitioners learnt about the innovation when they came across the Government Order, they became aware of the mechanics of the innovation only when they underwent the orientation courses. The source of the innovation was uniformly stated to be the Department of Education by the Headmasters and Physical Education teachers while the teachers identified the Headmaster and the Physical Education Teacher as the source. No earlier source had been identified by any of the respondents. All the physical education teachers reacted positively to the innovation, considering it as a panacea for their ills. During the interview, they expressed that their subject had been neglected all too long and they thought the innovation would give physical education its rightful place in the

curricula. Teachers other than physical education teachers adopted a neutral attitude to the innovation and considered the innovation as just an experiment.

5. ADOPTION OF THE INNOVATION:

Almost all the respondents got interested in the idea as soon as they became aware of it while a few others became interested a few weeks later. The headmasters were interested in the idea for the following reasons: (1) It would add a new dimension to the functioning of the school. (2) It was widely talked about. (3) It was given from above. The Physical Education teachers were unanimous that it was a probable solution to a problem they were facing. They also opined that it would in the longer run pay dividends. The other teachers were interested because it was widely talked about in their circles and it was given from above, they having no options. Six of the headmasters and all the physical education teachers collected further information about the idea. Their sources were the colleges of physical education and the inspectorate of Physical Education. Others who did not collect any further information about the idea thought it was somebody's (Physical Education teacher and the headmaster) job to collect details. Those who collected further details of the innovation reported that they got a clear understanding of the idea and considered the objectives worthwhile. The idea was passed on to others through informal meetings and at staff meetings. More than 50% of the teachers approved of it while a few teachers reported to be skeptic. The idea was shaped through discussion in the staff council

and at staff meetings. Except in one school, the idea was put into operation in its original form. In that school, the staff council made the modifications and the department was intimated of the modifications.

The Physical Education teachers reacted positively to the following statements. (1) They had a clear picture of what it was about (2) They agreed with its objectives (3) They felt the need for the innovation in the school (4) They believed the idea should be given the top priority (5) They believed it would work here (6) They knew how they would have to change (7) They believed it was worthwhile to do this. Most others responded positively to statement No.2 and negatively to Statement Nos. 4 and 6. They were neutral in their responses to others statements. The innovation had been discontinued in all schools. A great fillip to games and athletics was given due to the innovation. The playgrounds which used to be deserted were crowded with students. The physical education teachers who felt they were a neglected lot in the school found themselves duly recognised and were happy at the new role they were asked to play. No visible changes on the attitude of students to physical education were reported.

6. THE ADOPTION^{ER} CONTINUUM:

The innovation, being a department sponsored one, was introduced simultaneously in all schools and hence the adopter continuum as such could not be discerned with regard to this particular innovation. However from the responses to the

questionnaire, the migratory pattern among the adopter categories was found to be as given in the following table.

TABLE 1 : THE MOBILITY OF THE ADOPTER CATEGORIES IN THE COURSE OF ADOPTION OF INNOVATION.

From \ To	I	EA	EM	LM	L	TOTAL
I	-	-	-	-	-	-
EA	-	31	23	-	-	54
EM	-	-	42	12	-	54
LM	-	-	-	178	-	178
L	-	-	-	-	-	-
TOTAL	-	31	65	190	-	286

Upward movement : 35

Downward movement: Nil

7. ROLE OF CHANGE AGENT:

While the department of education had been mentioned by all as the change agent who introduced the idea and was interested in putting it into operation, most teachers specifically identified the then Director of School Education as the change agent. The

change agent developed a need for change in the client system, established a change relationship, diagnosed their problems, created an intent to change in them and stabilised change. Some reported that the change agent acted as the motivating force in implementation of the innovation. The change agent influenced most of the teachers and the role of the change agent was described as 'highly rewarding' and 'quite helpful'. His attitude towards the client system was 'friendly', 'understanding' 'persuasive' and 'cosmopolite'. While some felt he was authoritarian, an equal number considered him to be democratic. During the interviews, it was gathered that the innovation owed its origin and implementation to the Director of School Education who was himself a keen sportsman and sports lover. The change agent was reported to be higher in education and status than the respondents, while they were divided equally with regard to the values. The change agent dealt with the client system directly, through his subordinate officers and through physical education experts. The involvement of the physical education experts in evolving and promoting the innovation came for commendable mention.

8. ROLE OF OPINION LEADERSHIP:

No opinion leader within the school other than the Headmaster had been reported to have exercised any influence with regard to the implementation of the innovation. During the interviews, it was gathered that the Physical Education Association, Faculty members of the Colleges of Physical Education and the Regional

Inspectors of Physical Education had played a dynamic role in moulding the opinion of the client system.

9. DISSEMINATION OF THE INNOVATION:

Being a department promoted innovation, the practitioners had no direct role to play in the dissemination of the innovation. The Physical Education Teachers of schools met each other formally and informally and exchanged information about the innovation. They formulated solutions to problems so as to ensure effective implementation of the innovation. The change agent, the Director of School Education, introduced the innovation in all the schools, arranged for orientation courses for teachers and visited a number of schools to supervise the implementation as well as to assist the practitioners in getting over any problem. The successor Directors did not evince the same amount of interest as the Director who introduced the idea. It was surprising that the Chief Inspector of Physical Education, Tamil Nadu who as the Technical person was put in-charge of the scheme did not go beyond the Governmental directives and did not play an effective role in the implementation of the innovation. He arranged to have the orientation courses organised for teachers, and publish the handbook. When the innovation began to be practised, he failed to supervise, guide and render such help as necessary. He had not introduced any innovation and was reported to lack dynamism.

10. CAUSES AND EFFECT OF RESISTANCE:

No resistance had been reported to the innovation from any of the client system. The innovation was considered harmless and did not influence any category of teachers other than physical

education teachers to a large extent and the headmasters to a smaller extent. Though the innovation increased the work load of the physical education teachers, they thought the innovation had given them a status and a standing equal to that of any other subject teacher. For the first time, they conducted a written examination and the marks awarded by them were taken into account for purposes of promotion. Hence they found their ego satisfied. In course of time, the practical part of the evaluation was given up in most schools and the written examination alone continued. The workload was slowly shed in this way.

11. FACTORS FOR DISCONTINUANCE OF THE INNOVATION:

The innovation was discontinued within a year of introduction in 11 schools, within 2 years in 8 schools and after 3 years in one school. The factors leading to discontinuance were (1) There was no financial support (2) The person who introduced the innovation had left. The chief person who was responsible for the introduction of the innovation, the Director of School education was transferred to some other Department and his successor did not give the same amount of importance to the programme. (3) The subordinate officers did not continue to evince the interest. The lack of interest and dynamism on the part of the Chief Inspector of Physical Education who was to implement the scheme was an important factor for the discontinuance of the scheme. As the technical hand, it was his duty and responsibility to have nurtured and sustained the innovation, but he failed to take interest in the innovation. The lukewarm attitude of successor

heads of departments could be seen from the fact that the certificate mentioned in the government order approving the innovation had never been designed and issued to students.

Though the headmasters and the teachers thought the department was responsible for the discontinuance of the innovation, the departmental officers who were interviewed did not accept the view. They said the innovation was still in vogue. But they could not name any institution where it continued. The only trace of the innovation was the written examination in physical examination which was conducted in government schools with the maximum raised from 24 to 100, completely neglecting the practical aspect for which in the scheme was set 76 marks. The reason given out for conducting the examination was to help the boys pass the annual examinations. Since the marks for promotion prescribed by the government require a minimum aggregate for a pass, students were enabled to get the minimum aggregate through the examination in physical examination. The core aspects of the innovation were completely given up. All the respondents were sad that a good practice had been dropped and would welcome back the innovation, if reintroduced. The enigma regarding the causes of discontinuance could be gathered only through persistent questioning during the interview and a deep probe during the visits to schools by the investigator. The physical education teachers who had long felt they were a neglected lot in the education system felt boosted at the introduction of the programme and lent all-out support to

the scheme. The programme was introduced with all fan-fare. The enthusiasm was sustained for a year. The then Director of School Education often visited the schools and encouraged them to follow the programme. When he left the scene on transfer, they felt they had lost their friend. The records cost a lot in terms of money and time. The funds were not forthcoming. Among the physical education teachers there were two groups, one, a section of people who themselves were athletic champions and keen sportsmen, the second, mostly young, whose interest in physical education was not much as many of them had not even participated in games and athletics in their school days and who had taken to the profession just for a living, taking advantage of the proliferation of colleges of physical education and their liberal admission policies. The interest of this second group could not be sustained for long. The innovation required the physical education teacher to be present at the playfields and conduct the various activities until sun-set, almost for about 2 hours after the school was over. They found the innovation added to their burden. The maintenance of cumbersome records took a lot of their time. Teachers were afraid that the heads of schools might use the programme to find fault in their work and take vindictive action. So on one pretext or other, they slowly discontinued the programme. The directing force namely the inspectorate also became lukewarm after the change in the incumbent of the Director. The innovation slowly withered away.

12. THE MODEL OF CHANGE:

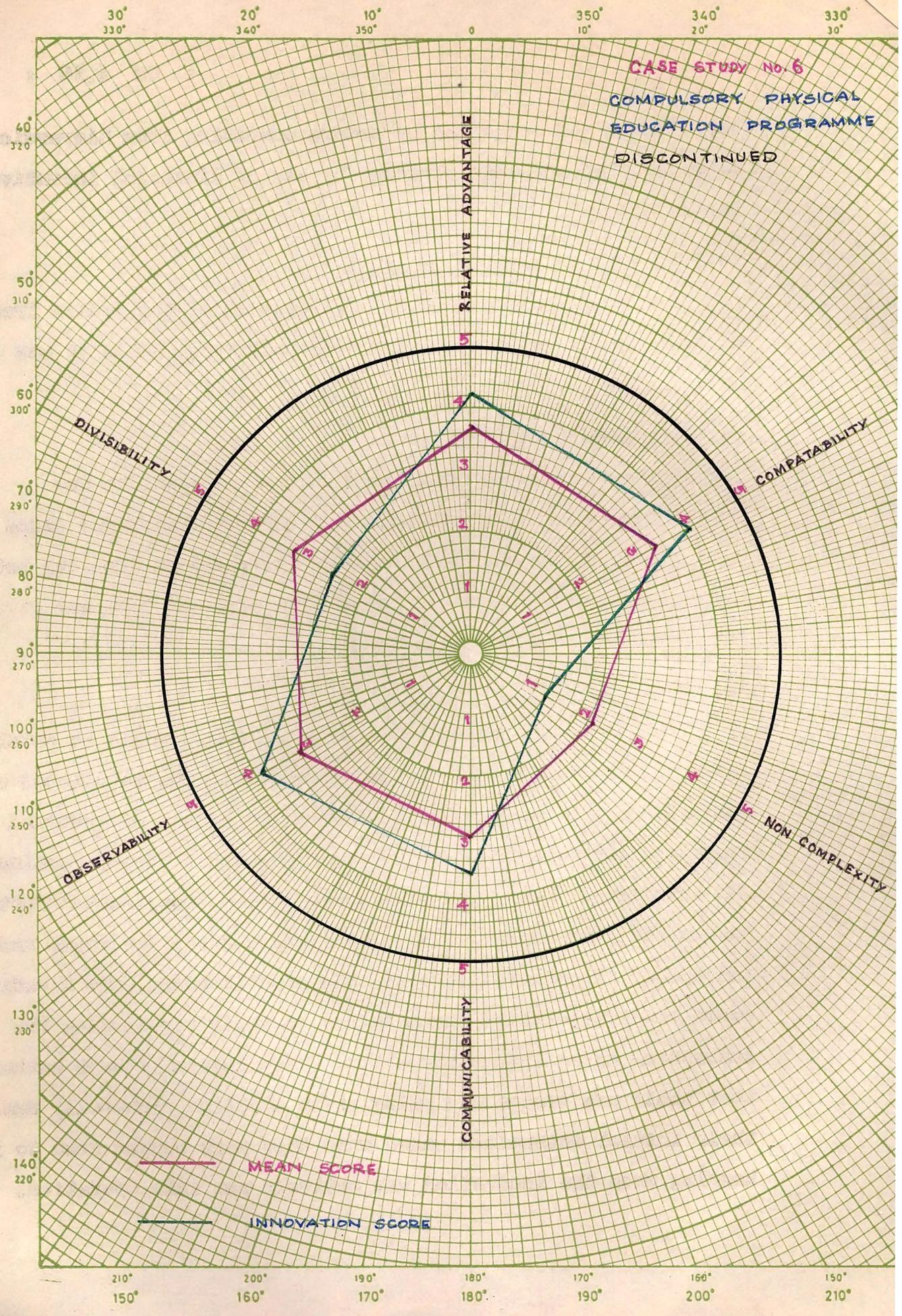
(a) The Process Model:

The Model of change adopted had the characteristics of the Research, Development and Diffusion Model. Though the innovation owed its origin to an individual's interest, he preferred to follow the R.D.D. Model. The Director of School Education just desired that play fields be used fully. He appointed a committee consisting of the faculty of colleges of Physical Education, drew a lot from the various researches made in India and abroad and formulated the innovation. It prepared a package for adoption in schools. Through orientation courses, a widespread awareness of the innovation was created amongst the practitioners in whom efforts were taken to build conviction. But it had to be pointed out that no field testing on a pilot basis was done and no efforts were taken to fit the innovation to the adopting institutions. Consequently the innovation failed to get institutionalised.

(b) Strategy adopted:

It is significant a variety of strategies had been adopted for motivation and intimidation of the clients. The Physical Education teacher was viewed as a professional and an appeal was made in terms of value priorities and hence adoption of value strategy could be discerned. The active involvement of the clients in the implementation of the innovation took note of the psychological needs of involvement and inclusion. The predominant strategy was however the authority strategy whereby

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the adopter was compelled by orders emanating from hierarchical superior. No economic strategy by way of financial incentive was adopted.

(c) Type of innovation Decision:

The innovation was introduced because of the orders from the government in its superordinate position. Hence it was an authority decision.

(d) Innovation Decision Period:

The mechanics of the innovation was conveyed to the practitioners in the latter half of 1975 and they were asked to put it into operation immediately. There was no time lag between the awareness stage and the adoption stage. No time was given for persuasion and decision stages.

13. EVALUATION OF THE INNOVATION:

The innovation scored high on complexity, while it obtained favourable scores on all the other factors. The techniques of scoring and the maintenance of records on behalf of each and every student were found to be too cumbersome, time-consuming and laborious. Hence the high score on the 'complexity' factor. Though the innovation could be split into parts for trial and introduced in selected schools, the practitioners gave a medium score on divisibility, probably due to their considering the innovation as an integrated whole. They initially were enthusiastic that their profession was being given a status rightfully due, but their initial enthusiasm waned when they were bogged down to record keeping when the innovation was actively put into operation.

14. CONSEQUENCES OF THE INNOVATION:

One favourable consequence of the innovation was exposure to modern evaluation techniques in Physical Education to teachers. For the first time, schools were grouped according to facilities available and the battery of activities and prescription of standards took note of the differences in individual students as well as in the facilities available in schools. The examination in theory helped students to acquire some general knowledge about games and athletics. Optimum utilisation of the playground with well-planned and well-laid courts and the time-tabling of games activities were other favourable consequences of the innovation. Students became aware of standards attainable by them and motivated them to try to reach the standards. The introduction of yoga asanas and physical exercises enabled some students to continue to practice them regularly. In short, though the innovation was discontinued in its original form, it had left a good impact on physical education programmes in schools.

15. A CRITICAL APPRAISAL OF THE INNOVATION, IN TERMS OF THE OBJECTIVES:

The objectives of the innovation were: (1) to make the students take an active interest in games and athletics (2) to use effectively the school playgrounds and (3) to put into effect a scientific evaluation scheme. No evidence was available to show that the interest of the students in physical education increased after the introduction of the innovation. On the other hand, it was reported that it was the same as before.

Even where the examinations in Physical Education were continued the interest in games and athletics had not been reported to have increased and the examination was taken just as those in other subjects. Though in the beginning ~~the~~ school playgrounds were put into use, the playgrounds presented a deserted appearance as before, in course of time. The scheme of evaluation, evolved with great care, was put into cold storage with the discontinuance of the innovation. Even when the innovation was practised, the details were not followed carefully. The innovation might therefore ~~the~~^{be} deemed to have been a failure in terms of the objectives realised.

CASE STUDY No.7

1. Name of the Innovative Practice :: Comprehensive Internal Assessment Scheme.
2. Type of Innovation :: Methodological
3. No. of Schools reporting the innovation :: 500 schools
4. Agency introducing the innovation :: The Department of Education
5. Change Agents :: N.C.E.R.T.
The Director of School Education
6. Opinion Leaders :: Teachers
7. Resisters :: Internal to the system - Teachers
8. Causes of Resistance :: Workload, cost, complexity of the innovation
9. Stages of Innovation :: Discontinued
10. Process Model of change :: Research Development and Diffusion Model
11. Type of Decision :: Authority Decision
12. Type of strategy :: Authority, value, rational and didactic strategies
13. Time lag :: No time lag between awareness and adoption.
1 - 2.5 years between adoption and discontinuance
14. Evaluation of the Innovation :: Relative Advantage : Low
Compatibility : Low
Complexity : High
Communicability : Low
Divisibility : Medium
Observability : Low
15. Sample for Study :: 20 schools

COMPREHENSIVE INTERNAL ASSESSMENT SCHEME

1. INTRODUCTION:

"The end of all education, all training should be man-making".

- Swami Vivekananda.

The objectives of education have several dimensions, covering the cognitive, the affective and the psychomotor domains of learning. When a student is reported to have completed his school course successfully, it is generally meant he has passed the examination in the various subjects, which, by their very nature and substance, cover only a part of the cognitive aspects of learning. Evaluation of other aspects of learning is seldom thought of and consequently not much serious attention is given in schools to the development of those aspects which have a greater bearing on the personality of the student. One can afford to forget how oxygen is manufactured, but the attitude to work, the habit of speaking truth, the ability to contrive models and the like are permanent acquisitions and will stand every person in good stead all through his life. Hence a proper evaluation of all such characteristics that a student is expected to learn and imbibe in the school is absolutely necessary not only for the benefit of the individual, but for the nation as a whole.

2. THE CONTENT OF THE INNOVATION:

(a) The conceptual basis of the innovation:

Education aims at promoting the all-round development of the child. This all-round development involves both the scholastic and

the non-scholastic areas. Schools have to help students to grow in both the areas. The school programmes should include- and often include in most schools - activities to cater to the non-scholastic areas like physical health, character traits, interests, attitudes and co-curricular activities. Since our examination take cognisance of the scholastic areas only, the attention and efforts of students and teachers are more often concentrated on that area alone, much to the neglect of non-scholastic areas.

The aim of the Internal Assessment Scheme is to make good this deficiency by putting adequate emphasis on the development of non-scholastic areas also and thus help to develop all aspects of a child's growth to his optimum potential. This scheme does not seek to classify the pupils into grades but aims essentially at their all round improvement or development. Assessment is done from time to time with a purpose of discovering the extent of their progress, their strengths and their weaknesses and then to take on that basis necessary steps to bring about the desired growth. Assessment is thus a means to an end and not an end in itself; it is done internally at the school level and not by any external agency.

Thus the scheme, in addition to stimulating pupils' scholastic growth, aims at promoting his physical health, developing in him essential personal and social qualities, building up desired attitudes, helping him cultivate his interests and providing

opportunities to him to participate and acquire skills in various curricular activities.

(b) The Mechanics of the Innovation:

The scheme covers the following aspects of pupils' growth and activities. (1) Physical growth (2) Scholastic aspects (3) Non-scholastic aspects (a) Personal and social qualities (b) Interests and (c) attitudes and (4) Co-curricular activities

In order to make an effective assessment of the pupil's growth in the above areas, the following informations are collected (1) Personal and family background data (2) Attendance (3) Growth in the following areas: (a) Physical health (b) Intelligence (c) Scholastic achievement (d) Personal and social qualities namely (i) regularity (ii) punctuality (iii) discipline (iv) habits of obdience (v) emotional stability (vi) initiative (vii) cooperation (viii) sense of responsibility (ix) industry (x) civic consciousness (xi) spirit of social service (e) Interests (i) literacy (ii) scientific (iii) musical (iv) artistic (v) social service (f) Attitudes towards (i) studies (ii) teachers (iii) schoolmates (iv) school programmes (v) school property and (g) Participation and performance in co-curricular activities (i) literary and scientific (ii) cultural (iii) Outdoor. About 6 literary and scientific activities, 6 cultural activities and 12 outdoor activities are suggested. While library reading, games and sports are compulsory activities, a student has to participate in one other outdoor activity and one other activity in literary, scientific and cultural areas. Detailed instructions

and guidelines organising activities grading and rating students on the various aspects are given in the Manual of Instructions prepared by the NCERT (1973). The teachers are required to maintain the following records: (1) cumulative record for each and every student (2) Individual Progress report (3) Student-wise individual files to preserve evidences collected about him in each area of development during the session (4) Activity-wise attendance registers. The cumulative record consists of 8 major sections: (1) Personal and family background (2) Physical health (3) Intelligence (4) Scholastic achievement (5) Personal and social qualities (6) Interests (7) Attitudes (8) Co-curricular activities. The Progress card meant to be communicated to the guardian at the end of every term includes all the areas of the scheme, namely (1) Scholastic achievement (2) attendance (3) Physical health (4) participation and performance in co-curricular activities (5) social qualities (6) attitudes and (7) Interests and personal qualities. Student-wise files will contain (1) Personal data form (2) Family background form (3) Anecdotal record forms, both positive and negative and (4) Rating scale forms - 3 for personal and social qualities, 3 for interests, 3 for abilities and 12 for four-co-curricular activities. In Internal Assessment certificate, covering all the areas of the scheme will be issued to a student passing the S.S.L.C.Public Examination.

(c) Modalities of Implementation of the Scheme:

A three day workshop with resource persons from the NCERT was conducted at Coimbatore in October 1973, selecting two headmasters from each district. In the workshop, the draft manual of instructions prepared by the NCERT was discussed and revised to suit the needs and the local~~s~~ of Tamil Nadu schools. 250 schools were selected all over Tamil Nadu for implementation of scheme during 1973-74, at the rate of 5 from each educational district. The schools were selected on the basis of their past record of organising co-curricular activities and their proneness to innovation, as judged by the District Educational Officers. The headmasters in turn conducted workshop late in November 1973 in their respective districts for heads of schools selected for implementation of the scheme. The heads of schools selected teachers to be in-charge of various activities and gave them detailed instructions, as in the Manual, for organising activities and maintaining records. An evaluation unit was formed at the SCERT to guide and monitor the programme. Within a period of 6 months, the unit saw three different officers in-charge.

(d) Sample for Study:

The innovation was introduced in 250 high schools in 1973 and in another 250 high schools in 1974-75. The sample for study of the innovation consisted of 20 high schools. 10 were in urban areas and 10 in rural areas. 6 were purely boys' schools, 6 were purely girls' schools and 8 were mixed schools. 8 were under private management, 8 were Government high schools and 4

were managed by local bodies. The innovation Profile was collected from every headmaster and 9 teachers from each school. All the twenty headmasters and 46 teachers were interviewed. Three District Educational Officers and one State Evaluation Officer were also interviewed.

(e) Documents Studied:

The following documents and records were studied:

- (1) Manual of Instructions prepared by the N.C.E.R.T.
- (2) Proceedings of the Director of School Education introducing the innovation and his circulars
- (3) Registers and records maintained in schools under the scheme.

3. OBJECTIVE, DESIGN AND TIME OF THE INNOVATION:

The objectives of the innovation were stated as follows:

- (1) to fill a void in the existing system.
- (2) to reduce the gap between the current practice and declared objectives.
- (3) to invent new ways of dealing with problems, and
- (4) to form part of self-renewal exercises.

The innovation was designed as an addition to a current practice in some schools and as restructuring of the existing practice in some schools where there existed some form of evaluation of the manifold skills and abilities of students prior to the introduction of the innovation. A few considered the innovation to be designed to eliminate old behavioural patterns and habits.

The character of the innovation was methodological, though it had some amount of organisational character.

4. AWARENESS OF THE INNOVATION:

The practitioners of the innovation became aware of the innovation between 0 and 5 years of its being made known in Tamil Nadu. They came to know of the innovation from the NCERT and the Department of School Education, Tamil Nadu. The SCERT though it existed at the time of the introduction of the innovation, was not involved in the project by both NCERT and the Department of School Education. It is noteworthy that at that time there were separate heads for the Department of School Education and the SCERT.

Most of the practitioners adopted a neutral attitude when the innovation was introduced, while a few reacted positively. There was no negative reaction. It might be due to the fact that the innovation was introduced in schools selected on the basis of their past record of innovativeness.

The general impression of the client system towards the innovation was that it was just an experiment. A few considered it as a proven educational ideal, while some thought it to be a difficult proposition to be put into operation.

5. ADOPTION OF THE INNOVATION:

Almost all the practitioners got interested within a few weeks of their becoming aware of the innovation. The heads of schools were actually called to a workshop-cum-training course by the NCERT. This invitation for the workshop was sent along with the communication of the selection of the school for implementation of the innovation. The factors of interest were

reported as follows in order of priority of preferences:

- (1) It was given from above; I had no options.
- (2) Its novelty was appealing.
- (3) It was widely talked about in the circle
- (4) It would, in the longer run, pay dividends.
- (5) It would add a new dimension to the functioning of the school.

It was found that there was a great concern among the practitioners to collect further information. The reason given was to get clarity of the evaluation programme. Most of the teachers were new to the concept of internal assessment. The measures and techniques of evaluation were found to be rather difficult for some categories of teachers who were non-graduates. Even after getting clarifications, most of them had no clear idea of the innovation.

The innovation had promoted a good amount of discussion among the teachers. They discussed aboutt the innovation informally in the staff room and the headmasters reported animated lively discussions at staff meetings.

After the idea was shaped, a sizeable number of teachers were found to be skeptic about it. It had been welcomed by Art and Craft teachers, Physical Education teachers and other non-examination subject teachers, who were happy that their subjects, neglected all along would be getting some recognition for the first time.

Detailed circulars were sent explaining the scheme and assigning responsibilities to each teacher. Since this was a departmentally sponsored innovation, no modification either of

the content or of the modalities of the innovation had been reported except in one school, where some minor modifications with regard to the techniques of evaluation were made with due approval of the department. These changes did not in any way affect the basic content and objective of the innovation. These modifications had been suggested by the teachers of the school.

The overall reaction of the teachers had been positive to the following statements: (1) They agreed with its objectives. (2) They felt the need for the innovation in the school. (3) They believed it was worthwhile to take up the innovation.

They reacted negatively to the following statements: (1) They had a clear picture of what the innovation was about. (2) They believed that the idea should be given top priority. Their reaction was neutral to the following statements: (1) They believed that it would work here. (2) They knew how they would have to change.

The innovation was discontinued in all the schools. The factors contributing to discontinuance are discussed later:

The climate of the schools was reported to have undergone a considerable change. Teachers found it difficult to understand the techniques of evaluation and they could not get the necessary assistance to know them. They also found that a great amount of work was involved in maintaining the various records. Some of them could not find the time to spend with the boys to assess their talents and skills. From a neutral reaction to the innovation at the beginning of the adoption stage, many of the teachers began

to develop a negative attitude. Though the teachers welcomed the idea as such at the beginning stage, they developed resistance. This was amply reflected in the changes in the adopter categories.

6. THE ADOPTER CONTINUUM:

A considerable change in the distribution of the adopter categories was noticed. About 50 per cent of the early adopters had moved to the early majority category and 10 per cent of the early majority group had moved to the late majority category. At the same time 5 per cent of early adopter had moved to the innovators category and a few laggards had joined the late majority. An upward increase was observed in the other categories, while the number of persons who moved upward was far less than the number of persons who moved downward in the adopter categories. Table 1 shows the movement of the adopter categories in the course of the adoption of the innovation.

TABLE 1 : THE MOBILITY OF THE ADOPTER CATEGORIES IN THE COURSE OF ADOPTION:

To \ From	I	EA	EM	LM	L	Total
I	44	5				46
EA		49	9			58
EM		49	169	13		231
LM			21	221	18	260
L					45	45
Total	44	103	199	234	63	634

Upward Movement : 45

Downward movement: 70

This kind of two-way movement, with the downward mobility being rather heavy, is indicative of the disturbance caused to the system. Being a departmental sponsored innovation and with the Director of School Education taking it as his personal project, pressures were evident for implementation of the innovation. Teachers developed a sense of frustration.

7. ROLE OF CHANGE AGENT:

Two change agents could be identified with regard to the innovation. The National Council of Educational Research and Training, New Delhi sponsored the innovation and was much interested in the implementation of the innovation. The Director of School Education who had taken a personal interest in the programme was another change agent. Both change agents helped the practitioners in developing a need for change, creating an intent for change and translating the intent to action. They had also established a change relationship with the client system. The change agents had influenced most of the teachers in the schools. While the role of change agent was described as 'highly rewarding' and 'quite helpful', the change agent was variedly described as 'persuasive' and 'authoritative'. The change agents had higher education and higher status, but held different values than the client system. The change agent had dealt with the teachers through the headmasters of the schools concerned. In short, the change agent had played an influential role in the adoption of the innovation. While one of the change agents, namely, the NCERT gave the technical guidance, the other change agent provided the administrative support to the innovation.

8. ROLE OF OPINION LEADERSHIP:

More than one opinion leader existed in every school. The opinion leader had been described as 'an innovator par excellence'. He also 'reflected the aspirations' of the teachers and 'used to take up teachers' cause courageously with authorities'. The teachers were approached directly by the headmaster and the opinion leaders had not been used to influence the teachers.

The reasons for not using the opinion leaders had been given as: (1) Not accustomed to approach a teacher through another teacher. (2) It is a departmental order. The teachers have to carry it out. There is no question of their liking the idea or not. (3) The opinion leader never met me in this regard.

9. DISSEMINATION OF INNOVATION:

The innovation was a departmentally sponsored one and at first introduced in selected schools. It was proposed to cover all the schools in a phased programme. There was no effort on the part of ^{the} practising institutions to disseminate that innovation. When the innovation was extended to a further batch of 250 high schools, heads and teachers of those schools sought information about the content, modalities, records and registers connected with the innovation.

The National Council of Educational Research and Training, which was one of the change agents did not take any steps ^{to} disseminate the innovation. As with regard to their numerous innovations, their role was confined to introducing a concept through the State Department of Education and Training to a small

group of persons in the techniques of the innovation. They expected a chain reaction to take place for dissemination. Such chain reaction did not take place. The other change agent, the Director of School Education, was personally interested in the scheme and desired to extend the scheme to all schools in batches of 250 schools per year. During the first year, 250 schools were selected for the implementation of the innovation and another batch of 250 schools were selected for the second year. Since there was a change in the incumbent of the office of the Director of School Education, the extension to other schools in subsequent years did not materialise.

10. CAUSES AND EFFECTS OF RESISTANCE:

The innovation, being an officially sponsored one, did not meet with any open resistance in the beginning. But as the innovation began to be introduced, resistance developed slowly among a section of teachers and resistance was shown in the initial stage indirectly and later directly. The resistance was exhibited by not maintaining the records upto date, blaming the students for not co-operating, finding fault with the office establishment for not supplying stationery needed and such other excuses. Some of them also expressed their fear to the headmasters that their actual 'class work' suffered and that they would not be able to complete the lessons prescribed for the terminal or annual examinations. In schools, where the activities for students were arranged on a fixed week day, teachers in charge of the activities applied for leave for the particular session when activities were to be conducted.

Teachers also resisted when asked to stay after school hours to conduct and evaluate the student activities. Resistance was more to the maintenance of records and to conducting the activities outside their normal school hours. No effort to get over the resistance was made. A few headmasters did not disapprove of the teachers maintaining false records. This encouraged more teachers to 'maintain records' rather than conduct the activities. Since departmental officers cared for records only, the innovation came to exist in paper and registers only. Another aspect for resistance was the cost aspect. The registers to be maintained were reported to cost about Rs.400/-. The Progress Report which were until then a sheet of paper, ran to 8 pages with several columns. At the end of every term, it took about 10 minutes per student for the teacher to prepare the report to be sent to the parents.

11. FACTORS OF DISCONTINUANCE OF THE INNOVATION:

The innovation existed for just two years and was allowed to disappear. There was a change in the incumbent of the office of the Director of School Education. The previous Director of School Education who was the soul and spirit of the innovation having left the scene, no effort was taken to sustain the innovation. The innovation, having developed a good amount of resistance among the practitioners and having been kept alive solely on authority, was allowed to wither away. It was the cumulative 'unrecorded' decision of the headmaster, the teachers and the department. Though a separate officer was appointed for the scheme at State level, the innovation existed only on paper. These were three

different incumbents of the office within a period of 6 months. The predominant feeling among the teachers was a sigh of relief though a few felt that a good scheme had been dropped. This was evident from the fact that the reaction of most teachers was positive to the query. "If the practice is reintroduced after rectifying the defects, what would be your reaction?".

The following factors may therefore be discerned as responsible for the discontinuance of the innovation: (1) The innovation required cumbersome maintenance of time-consuming and illegible records. (2) The procedures like rating scale, anecdotal records, etc. required a higher degree of skills and involvement on the part of the teachers. (3) No effort was made to bring the teachers' practical difficulties to the notice of the authorities. (4) The authorities did not also care to find out the reaction of the practitioners. (5) The prime change agent left the scene.

12. THE MODEL OF CHANGE:

(a) The Process Model:

The innovation had its origin in the theoretical studies in the field of normative evaluation and was promoted by the National Council of Educational Research and Training. The innovation might therefore, be said to belong to the Research, Development and Diffusion model. The following stages of the RD and D model were identified in the adoption of the innovation.

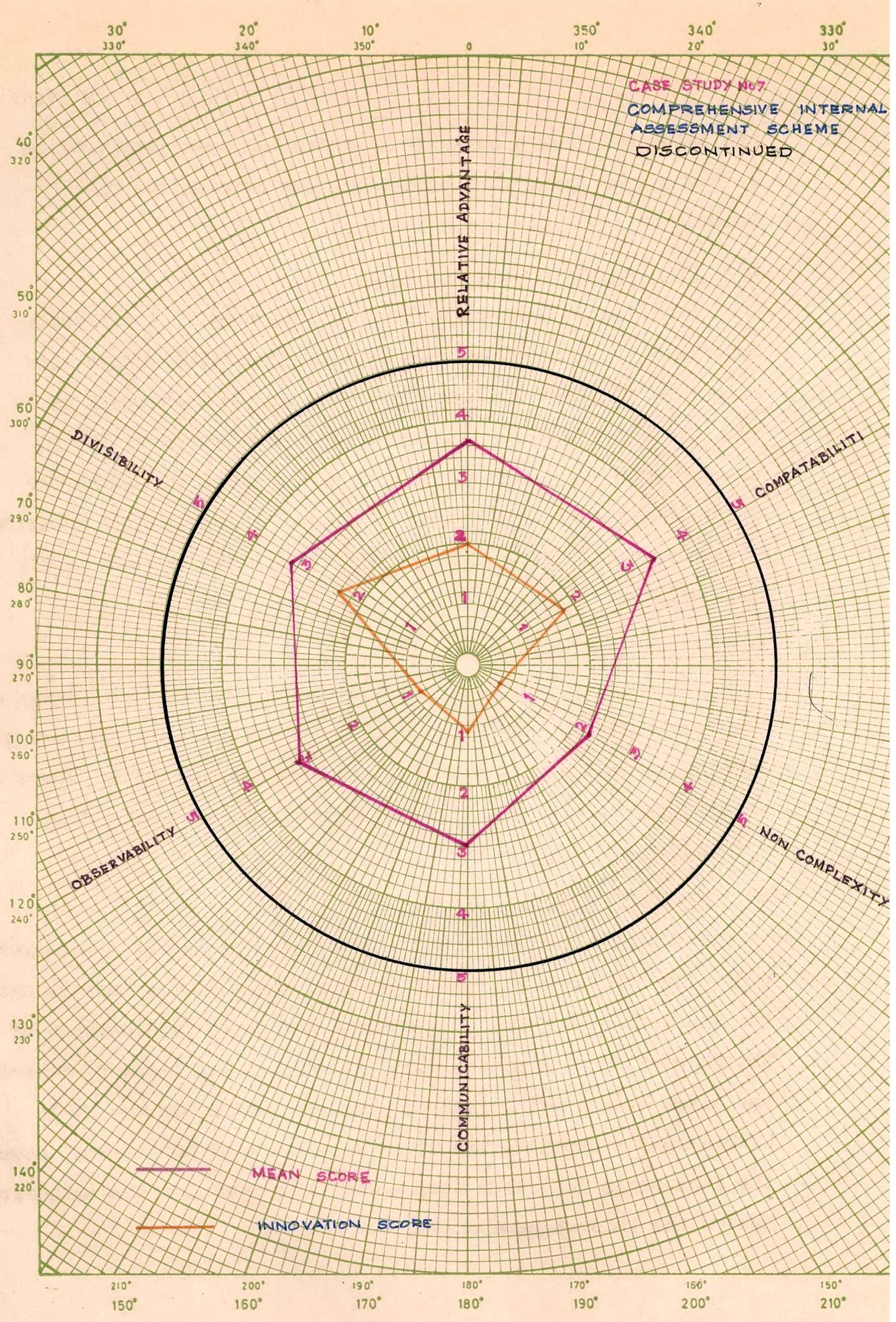
- STAGE 1 : To innovate, that is, to formulate a new solution to some operating problem.
- STAGE 2 : To engineer, that is, to order and systemise the components of the invented solution; to construct an innovation package for institutional use.
- STAGE 3 : To inform, that is, to create widespread awareness of the innovation among the practitioners.

While the above three stages were gone through with sufficient care, the next three stages of building conviction, testing and operationalizing were not followed with the result that the final stage of institutionalisation did not materialise. In the R.D.D. Model, it is very essential that the practitioners were enabled to examine and assess the operating qualities of the innovation so as to build conviction among them. Likewise, a rigid uniformity of techniques among all schools without freedom to make modifications necessary to suit the institution did not allow for the testing stage.

(b) Strategy adopted:

While one of the change agents, namely, the NCERT, adopted a combination of value, rational and didactic strategies on its assumptions that the practitioners were willing professionals to learn to change who could be convinced of the innovation through rational analysis, the other change agent, the Directorate of School Education adopted the authority strategy to implement the innovation. Of the six diffusion techniques, telling, showing, helping and training were adopted, while the techniques of involving

1



and intervening were absent. If there had been intervention by the change agent when resistance was developing, the innovation might have been salvaged.

(c) Type of Innovation Decision:

The type of Innovative decision was purely an authority decision. No prior consultation with the client system with regard to the need for the innovation or the techniques of adoption was made. In the course of the adoption of the innovation also, the innovation relied more on the authority for its existence than on the individual or collective decisions of the practitioners. The decision to discontinue was partly collective.

(d) Innovation Decision Period:

It was found that the innovation was adopted immediately on the practitioners becoming aware of the innovation. The two stages, namely, persuasion and decision had been skipped over. There was no time lag between ^{the awareness and} adoption and ^{the adoption stage} ~~discontinuance~~ ^{the time between adoption and} discontinuance ranged from 1 to 2.5 years.

13. EVALUATION OF THE INNOVATION:

The innovation was thought of and introduced by a research body, the NCERT. Great pains had been taken by the body to design the innovation and prepare a package for ready introduction of the innovation in schools. The training of the heads of schools was given by the NCERT itself. The innovation had the full backing and support of the State Department of Education. However, the innovation fell down like a pack of cards when the authority behind the innovation changed.

It is significant that the innovation had not been favourably evaluated on five of the six factors, namely, Relative Advantage, Compatability, Complexity, Communicability and Observability and was neither favourably nor unfavourably evaluated on the sixth factor, divisibility.

The teachers perceived the innovation as a complex one and they were not sure about the effects of the innovation. Since the innovation suffered from such low gradings, it failed to get institutionalised.

14. CONSEQUENCES OF THE INNOVATION:

Though the innovation was discontinued, there had been quite some favourable consequences of the innovation on the system. An awareness of the need for evaluating the total personality of the student has resulted from the adoption of the innovation. Planning and arranging a large number of activities for the students has been one of the most significant consequences of the innovation. Recognition of latent diverse talents among teachers was made possible when teachers were chosen to be incharge of several activities.

The unfavourable consequences were ^{increased} introduced work-load, dishonesty in maintenance of records and resistance.

15. A CRITICAL APPRAISAL OF THE INNOVATION, IN RELATION TO ITS OBJECTIVES:

The main objectives of the innovation were (1) to provide for variety of activities in schools to develop scholarstic and non-scholastic capabilities of students (2) to identify students with talents in different areas and (3) to make a comprehensive assessment of the total personality of the student. A variety of

activities were introduced in schools where they were not earlier to the introduction of the innovation. But when the innovation was discontinued, the activities disappeared not only in schools where they were introduced as part of the innovation but also in many of the schools who had provided for activities much earlier to the introduction of the innovation. The innovation had thwarted activity centred schooling though its objective was otherwise. Recognition of talented students depended more on the traditional pattern as the entries to various inter-school competitions showed that the selection was more based on the subjectivity of the teacher in-charge rather on the cumulative internal assessment records. Though the secondary school leaving certificate, since renamed as the Cumulative Record, provided for entries relating to the scholastic and non-scholastic achievements of students, a perusal of the school records of the cumulative record showed the following: (1) In most schools, entries were not made regarding non-scholastic areas (2) Even where entries were made, all the entries were bracketed and a common grade was given. (3) The teachers involved in organisation of activities were not associated with making the entries in the cumulative record. It was the office assistant or teacher in-charge of records who made the entries in an arbitrary manner. The objectives of the innovation might therefore be considered as not realised.

CASE STUDY No.8

- | | | |
|---|----|--|
| 1. Name of the Innovative Practice | :: | Work Experience |
| 2. Type of Innovation | :: | Organisational |
| 3. No. of schools practising the innovation | :: | 5 Schools |
| 4. Agency introducing the Innovation | :: | School Authority/SCERT |
| 5. Change Agent | :: | Headmaster/Secretary |
| 6. Opinion Leader | :: | Headmaster |
| 7. Resisters | :: | Nil |
| 8. Causes of resistance | :: | -- |
| 9. Stage of Innovation | :: | Institutionalised |
| 10. Process Model of change | :: | Problem solving Model |
| 11. Type of decision | :: | Contingent decision |
| 12. Type of strategy | :: | Value strategy mainly and all the other known strategies were also used. |
| 13. Time lag | :: | 0 - 2 years between awareness and adoption. |
| 14. Evaluation of the innovation | :: | Relative Advantage : High
Compatability : High
Complexity : Low
Communicability : High
Divisibility : High
Observability : High |
| 15. Size of Sample for Study | :: | 5 Schools. |

W O R K E X P E R I E N C E

1. INTRODUCTION:

The importance of Work Experience in the education system has been stressed by every Education Commission set up over the years. Mahatma Gandhi, Father of the Nation declared that work and education should go together and neither be separated from the other. Even as early as 1929, the school curriculum in the then Madras Presidency, of which the present Tamil Nadu is a small part, had included manual training as a subject. But the students did not take to Manual Training seriously except in a few schools, due to its being considered infra-dig by the elitist who formed a considerable section of the student community. Since Independence, study of craft has been made compulsory right from I standard in Tamil Nadu. However, the spirit behind the inclusion of the craft training, namely, to learn to use one's own hands and to understand the dignity of labour has remained as a dream. It has, therefore, been found that mere provision of activities, without giving stress on the philosophy of work, will not achieve the desired objective. Kothari Commission has suggested the introduction of Work Experience in the curriculum, which is an improved version of the earlier programmes with the defects removed or reduced and which has drawn much inspiration from the polytechnical education of the U.S.S.R.

2. THE CONTENT OF THE INNOVATION:

(a) Conceptual basis of the Innovation:

Work Experience is defined as "participation in productive work in school, in the home, in a workshop, on a farm, in a factory

or in any other productive situation".(Education Commission, 1966). Integrating education with work is not only possible but essential in modern societies which adopt science based technology. The complex techniques of production, including those in agriculture, adopted in modern societies require higher forms of general or technical education and a comparatively higher level of intellectual ability. The educated person becomes an important factor of production. Work experience links itself realistically with technology and the application of science to productive processes. It accustoms the pupil to handling common tools and instruments of labour and the training helps to develop creative technical abilities and to inculcate a love and respect for physical labour and work (Shapovalenko, 1963). A well organised programme of work experience results in some earning for the student, either in cash or in kind. The ultimate objective should be to move towards a situation in which the education of a student is not held to be complete unless he participates in some type of work experience in real life conditions and earns some amount, however small, towards his own maintenance. This will also "help to develop in him values which promote economic growth, such as appreciating the importance of productive work, and manual labour, willingness and capacity for hard work and thrift" (Education Commission, 1965).

(b) Description of the Innovation:

For the purpose of this study, work experience as defined and suggested by the Education Commission, 1964-66 was alone considered.

The innovation related to providing students with experience of work. A provision of about 90 minutes was made in the time table every week for work experience. In addition, work experience activities were arranged out of school hours on week days, on weekly holidays and during terminal holidays. The activities were chosen to suit different age groups of students and their diverse interests. Some of the activities provided were making greeting cards, fretwork, net-making, papiermache, paper making, cardboard modelling, paper designs, flower gardening, environmental cleanliness etc. for students of standards VI and VII, furniture making, toy making, wood carving, cloth making, crop production, school plant maintenance, book binding, textile designing, etc. for standards VIII and IX. Participation in work experience programmes by students of X Standard was optional. 'Wealth from waste' was also a programme where thrown-away materials were collected from roadside and public places and converted into useful materials. This programme was found in three schools. In one school, table weights and table decoration models were made from wood waste collected from workshops, using all kinds of ingenuity of design. The entire requirements - note books for the school and the schools in the neighbourhood were made by students in another school. In a Government School, students took care of whitewashing and maintenance of the school building. Most of the schools offered a 'Earn while you learn' programme also. All the articles made by the students were sold and after deducting the cost of raw materials, the balance was shared between the school and the students who made the articles. Job works for outsiders

were also undertaken. The slogan 'Each one Make one Take one' in a school encouraged students to make articles of use to them and their homes. In a particular school, a student could earn anything upto Rs.30/- per week, working 2 hours a day for 3 days in a week by making packing cases for an industry. There were very interesting variations of the activities. But the common factor among the programmes of all the five schools were

(1) students were motivated to work with their own hands;
(2) students went through all the phases of production namely planning, designing, indenting and stocking materials, producing, finishing and marketing; (3) students took up the work with pleasure, understanding the dignity of labour; (4) the 'Earn while you learn' programmes was purely a voluntary programme and was arranged with caution and care so that students opting for the programme got equal opportunity and their regular studies were not affected by the programme; (5) there was no exploitation of students' labour, by adequately compensating them or by taking up a project of common benefit, (6) every student was exposed to a variety of activities in the course of his school career instead of just learning one activity, (7) productivity and conservation aspects were given importance; and (8) students were given sufficient freedom to select the activity and the project under the activity.

3. OBJECTIVE, DESIGN AND TYPE OF THE INNOVATION:

The objectives of the innovation were (1) to fill a void in the existing system and (2) to invent new ways of dealing with problems. The schools desired that the students should be introduced to a feel of work and given a new dimension in their concept of work.

The innovation had been designed as (1) alteration of a current practice in two schools and (2) addition to a current practice in the other three schools. The innovation was organisational in character. While all the students were involved in the innovation, only a handful of teachers participated in the innovation.

4. AWARENESS OF THE INNOVATION:

The innovation had been initiated by the schools themselves and the source of innovation was the individual schools. Though the headmasters had played a dynamic role in conceiving the innovation, it was the teachers who planned, designed and implemented in the innovation. The innovation was introduced as it would benefit the students and as work experience had been a proven educational ideal. The innovation was known to the schools for a longer time. While three schools reported the time of awareness of the innovation as the publication of the Kothari Commission Report, the two Governmental schools became aware of the innovation when the department of education conducted the workshop in work experience late in 1975.

5. ADOPTION OF THE INNOVATION:

Being an innovation promoted by the school itself, the practitioners became interested in the innovation as soon as they became aware of it. The factors of interest were (1) it was a probable solution to the problem they were facing. (2) it would add a new dimension to the functioning of the school, and (3) they were eager to promote the innovation before any other

school. The practitioners were clear about the idea and believed that the objectives were worthwhile and that there was a need for the particular innovation. The idea was passed on to their colleagues at staff meetings and through informal meetings. The headmasters also issued circulars, giving details of procedure for adoption of innovation. Almost all practitioners welcomed the idea. The staff council discussed the idea. The teachers concerned also met together to shape the innovation. Though the ideational part of the innovation was not modified, the implementation of the innovation underwent a few changes at the hands of the practitioners. These changes were in the form of refinements and extension of the operation of the innovation. These modifications were made by the headmaster and/or the staff council or the individual teacher. A considerable amount of freedom and flexibility was discernable in all the five institutions. The teachers had a firm belief in the worthwhileness of the scheme, The innovation had become part and parcel of the school system i.e. institutionalized in all the five schools. The innovation was considered to be easy to understand and use and was consistent with the existing values, past experiences and the needs of the institution. The inspecting officers had expressed their appreciation of the innovation and had spread the idea to other schools. The schools had gained in stature because of the innovation. Visits by dignitaries were often arranged to see the work experience for the benefit of other teachers. A State level workshop on work experience was also conducted in one of the five schools. Students had also participated in a number of

exhibitions, conducted by the Department of Education and other agencies and won public recognition. There was a general feeling that the innovation had raised the image of the school, its teachers and students. It is noteworthy that one of the schools, adopting the innovation had been awarded the Jamnadas Bajaj Award of Rupees one lakh as a commendation for its activities.

6. THE ADOPTER CONTINUUM:

It is significant that no laggard had been reported in any of the schools. With regard to the time dimension, almost all the practitioners had adopted the innovation at the same time. There had been a positive change in the attitudes of teachers with regard to the innovation. The desire to improve the innovation constantly was an evidence of the keen interest the teachers had evinced in the innovation. Every year, new activities were being added to the work experience programmes and some of the programmes which had become either obsolete or too conventional or too familiar had been replaced. The innovativeness of the teachers was clearly seen when the nature, scope and variety of activities were examined. Table 1 presents the mobility of the adopter categories in the course of the adoption of the innovation.

TABLE 1 : MOBILITY OF THE ADOPTER CATEGORIES IN THE COURSE OF THE ADOPTION OF THE INNOVATION:

From \ To	I	EA	EM	LM	L	Total
I	18	2				20
EA		23	1			24
EM			31			31
LM				33		33
L					-	-
TOTAL	18	25	32	33	-	108

7. ROLE OF CHANGE AGENT:

The change agent had been identified as the headmaster in four of the five schools and the Secretary of the School Committee in the fifth school. The change agent had developed a need in the clientele and had also helped to translate the intent to action. He had further been responsible for stabilising change and preventing discontinuance of the innovation. The change agent had influenced most of the teachers in the institution. While his role had been described as 'quite helpful', he himself was 'friendly and understanding', 'persuasive', 'democratic' and 'cosmopolite'. While his education had been 'higher' or the same

in four schools, it was 'lower' in one school. His status had been higher than that of the practitioners in all the schools. The values of the change agent was the same as those of the client system in three schools, while they were different in the other two. It was reported in the two schools that the change agents were idealistic and had higher moral and spiritual values. The change agent dealt with the teachers directly. There was good rapport between the change agent and the client system.

8. ROLE OF OPINION LEADERSHIP:

There had been more than one opinion leader in each of the schools, but his influence was not greater than that of the change agent. To some, the change agent and the opinion leader were one and the same person, namely, the headmaster. The opinion leader was described as "an innovator par excellence" and as one whose "feelings were in tune with the practitioners". The opinion leaders other than the headmaster did not seem to influence the decisions of the practitioners with regard to school work.

9. DISSEMINATION OF THE INNOVATION:

Only three of the five schools had taken efforts to disseminate the innovation. The heads of the schools took the initiative to pass on the idea to other schools through the Education Department. The Inspecting Officers who came to know of the innovation during their formal visits for annual inspection of the schools and during their many informal visits to the schools conveyed information

about the innovation to other heads of schools and teachers in other schools. These three schools had been known to be innovative institutions. Some headmasters along with a few teachers visited the innovative schools to collect details of the innovation. Information was sought on the process of implementation and the financial aspect of the innovation. Details about maintenance of accounts with regard to 'Earn while you learn' programme were asked for, in addition to rules and procedures pertaining to the sale of produce and payment to students. Each of the three schools had reported that two to four schools had adopted the innovation from it and the schools had introduced the innovation without changes or with slight modifications. The innovations were reported to be continuing in the institutions. The schools adopting the innovation had been reported to be practising the innovation more or less on the same lines as the innovative institutions.

10. THE CAUSES AND EFFECTS OF RESISTANCE TO THE INNOVATION:

Only a small percentage of teachers were involved in the innovation in the schools. They too were selected based on their willingness and past history of co-operation and dedication. Further, sufficient time was given for a proper evaluation of the innovation before a decision was taken to implement the innovation. No resistance was, therefore, met in any school to this innovation.

11. FACTORS CONDUCTIVE TO CONTINUANCE OR DISCONTINUANCE OF THE INNOVATION:

The innovation had not been discontinued in any of the five schools where it was introduced. The main factor responsible

for the continuance of the innovation was that the change agents, namely the Headmasters and the Secretary, were also the decision-makers. Three schools were considered as successful innovators. Further there was continuity of leadership in all the schools. Even in the two government schools, most teachers who were involved in the innovation had been working in the same schools for over 10 years. Students responded to the innovation very well. Incentives like 'Make one Take one', 'Earn while you learn' etc. contributed to the success of the innovation.

12. MODEL OF CHANGE:

(a) Process Model:

The innovation of work experience had been referred to in the Report of the Education Commission, 1964-66. It had been widely reported and discussed in academic circles. The headmasters had become aware of the same while the Secretary of the School Committee referred to earlier had great faith in work experience, being a dedicated Sarvodaya Worker. They were interested to know more about the innovation. The Soviet Union model given in the Education Commission's report, the models suggested by leading educational journals like Quest in Education, Educational Review, etc. were studied in great depth and a mental evaluation of the models was made and a model appropriate to the school was chosen. It was tried on a small scale for a year or two and the decision to adopt was made. The innovation was then adopted on a full scale. While this had been the process adopted in three of the five schools, the two governmental schools were exposed to the concept at the NCERT - SCERT workshop on work experience.

Immediately on return to their institutions, the heads of schools conveyed the innovation to the teachers. The teachers discussed the innovation, evaluated the innovation and adopted the same. The process model of change was therefore identified as the problem-solving Model.

(b) Strategy Adopted:

The change agents informed the practitioners about the worthwhileness of the innovation, saying it would bring great benefit to the student community. The appeal being made in terms of value priorities, value strategy had been adopted.

The change agent also gave out the reasons and the logical basis of the innovation, impressing on the practitioners that the innovation was feasible, it had great utility and it was possible to introduce the innovation effectively. This appeal to reason showed that the change agent resorted to rational strategy.

The change agent having convinced the practitioners about the need for the innovation, found that they were willing to adopt the innovation, but were lacking a knowledge of the modus operandi for the innovation. He, therefore, explained to them how it would be implemented. It might, therefore, be seen that a didactive strategy was also adopted.

The change agent found the latent talents in the teachers which were hitherto not being effectively used for the benefit of the institution by assigning to each practitioner the type of activity for which he had a special talent. The psychological

needs of the individual were also fulfilled. Hence, the psychological strategy had also been adopted.

In one school, economic strategy was also adopted by sharing the profit made from the 'Earn while you learn' programme with the teachers along with students and the institution.

In two schools, the innovation was introduced through direct exercise of the authority. In the other three schools, though authority was not explicitly exercised, it was implicit since the change agents being the centre of authority were deeply interested in the successful implementation of the innovation. Authority strategy was also visible.

This was one of the very few innovations where all the six known strategies had been adopted.

(c) Type of Innovative Decision:

It was the change agent who was also in the seat of power who decided at first to go in for the innovation. Hence, the innovative decision adopted was an authority decision. However, in all the schools, the practitioners were deeply involved in the decision-making process with regard to the innovation. While the change agent had taken the dual role of stimulation of interest and initiation of the innovation, the staff council had effectively legitimised the idea. The practitioners then decided to act and the innovation was adopted. Therefore, the collective innovation decision was contingent on the authority decision which preceded the same.

(d) Innovation Decision Period:

While three schools had become aware of the innovation late in 1966, on the publication of Kothari Commission Report, the exercises to implement the innovation started in the middle of 1967 and the innovation was introduced in 1968. In the case of the other two schools, the innovation was known in December, 1975 when the State Level Workshop on work experience was conducted and the innovation was introduced in the later half of 1976. There was a definite time gap between the awareness stage and the interest stage, and the interest stage and the adoption stage. A considerable time was also allowed between the other stages. These time lags had helped the idea to get percolated to the practitioners slowly and steadily. The time was sufficient to provide for considerable thought being bestowed to examine initially the innovations and take decisions. The innovation - decision period was sufficiently long enough for this exercise. The length of innovation-decision period might, therefore, be seen as a positive indicator for the adoption of the innovation.

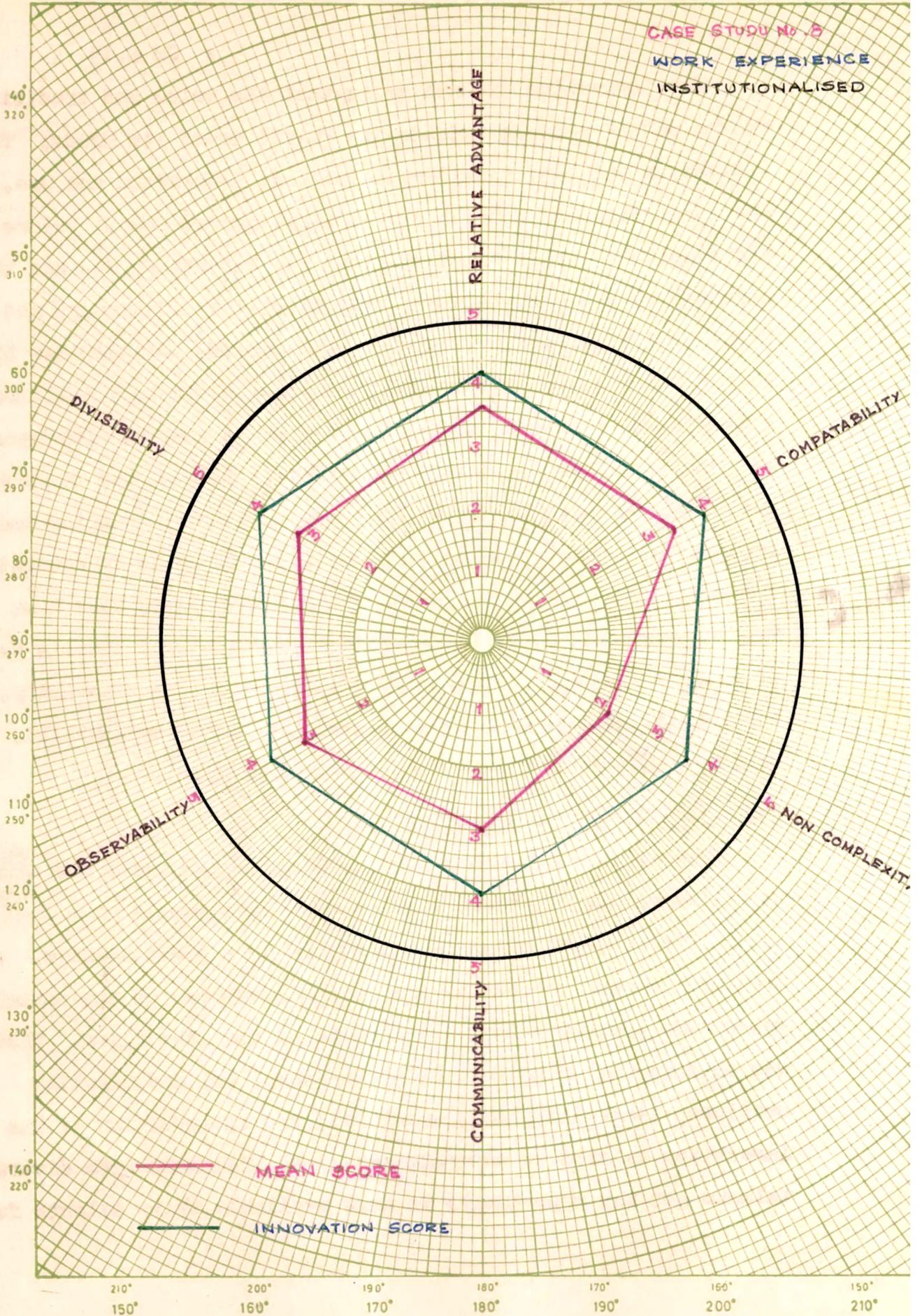
13. EVALUATION OF THE INNOVATION:

The innovation was introduced in lieu of the craft training which the schools were having, or in addition to that. A comparison between work experience and craft training was made. It had been found that work experience had far greater value than the craft training. The innovation had been perceived by the practitioners as a better idea.

8

30° 20° 10° 0 350° 340° 330°
330° 340° 350° 0 10° 20° 30°

CASE STUDY No. 8
WORK EXPERIENCE
INSTITUTIONALISED



MEAN SCORE
INNOVATION SCORE

The innovation did not go against the value and traditions of the school and was intended to fulfil one of its needs. The innovation had been considered simple to understand and use. The innovation had a trial run at least in one school before its adoption, being tried at first for two standards, and then extended to the whole school. Its simplicity of concept and design could be easily transmitted to others. Neither the time factor nor the cost factor nor the nature of concept could be a deterrent in explaining the innovation to others. The benefits of the innovation were easily perceivable through the students' enthusiasm and participation, the prestige the innovation had brought the school, the invitations to participate in exhibitions, the visits of dignitaries, etc. It is, therefore, seen that the innovation had highly favourable scores on all the six factors of the innovation, namely, relative advantage, compatibility, complexity, divisibility, communicability and observability. Hence, the innovation had a high intrinsic value.

14. CONSEQUENCES OF THE INNOVATION:

The main consequence of the innovation had been, the attainment of its objective, namely, to introduce the students to a feel of work. This objective had been attained to a great measure. A greater and more purposeful use of the resources of the school system was another major consequence of the innovation. There was an integration of the school workshop, art and painting sections, laboratory, etc. which till the introduction of the innovation existed as separate entities. Teachers with diverse talents got the opportunity to make available their talents for

the benefit of the students and the school. When the ingenious models, greeting cards, and other creative pieces of the students were seen, it could be said that a greater scope for the display of creative imagination was provided. The school plant and buildings were properly looked after on a self-help basis, instead of relying on the management or government to attend to repairs and upkeep. A kind of pride in achievement and a desire to be recognized had been created among students. This was evident from the way students made use of the 'Each one Make one Take one' slogan. It had been reported that before the students made any article of use to himself, they made articles for their homes. A student first thought of his devout grandfather and made a reading case for keeping the Ramayana for 'Parayana' purposes. Then he made rollers for his mother to make Chappattis' and sling for his brother who had to carry drinking water from about 5 km away every day. Then only he thought of himself and made a cricket bat. The heads of schools reported that there was better discipline in the school after the introduction of the innovation. The one unfavourable consequence namely, overworking to earn a little more was taken note of early enough and remedial action taken.

15. A CRITICAL APPRAISAL OF THE INNOVATION, IN RELATION TO ITS OBJECTIVES:

The main objectives of the innovation were (1) to introduce to the students a feel of work. (2) to make the students understand the dignity of labour and (3) to infuse in students and attitudes

for self-help and self-reliance. These objectives had been attained to a fair degree as discussed in the earlier paragraphs. The joy and willingness with which the students were reported to have joined the work experience programme was evidence of the realisation of the objectives of the scheme. The tidiness with which the students maintained their tools and plants in and outside their classes and the pride exhibited by them in participation in several exhibitions showed that the students had understood the value of the dignity of labour. On the whole, the innovation was a successful one and had realised the objectives to a large extent.

CASE STUDY No.9

1. Name of the Innovative Practice :: Library Centred Teaching
2. Type of Innovation :: Methodological
3. No. of schools practising the Innovation :: 25 Schools
4. Agency introducing the innovation :: Teacher's Union
5. Change Agent :: Academic Wing of the Teachers' Union
6. Opinion leaders :: Teachers
7. Resisters :: Nil
8. Causes of Resistance :: Nil
9. Stage of innovation :: Institutionalised in 5 schools
Discontinued in 5 schools
10. Process Model of change :: Problem Solving Model
11. Type of decision :: Collective decision
12. Type of strategy :: Value, rational and didactic strategies
13. Time lag :: 6 months between awareness and adoption
14. Evaluation of the Innovation :: Relative Advantage : High
Compatability : High
Complexity : Low
Communicability : High
Observability : High
Divisibility : High
15. Sample for study :: 10 schools.

LIBRARY CENTRED TEACHING

1. INTRODUCTION:

"The first principle of true teaching, "says Aurobindo, "is that nothing can be taught. A teacher is not an instructor, training recruits or commanding fatigue squads; he is an assistant and a guide. His function is to suggest, not to impose. In fact, he does not educate the students' intelligence, he merely shows him how to perfect the instruments of knowledge, helping and encouraging him throughout his development. He does not transmit knowledge to him; he only shows him how to acquire it for himself". (UNESCO, 1975).

Promotion of self-learning is a desirability in a democracy. Intelligent and effective use of the library is one of the ways by which training in self-learning can be imparted to pupils. "In a school that educates pupils for a changing world," the Secondary Education Commission (1952) quotes S.R.Ranganathan, father of ^{the} Indian Library Movement, "the school library should be a live workshop". Every school has a library, big or small. Whatever be its size, many studies have shown that libraries have not been made adequate and effective use of, in our system. The dictum of the Secondary Education Commission (1952) that "the library plays the same part vis-a-vis all the other subjects as the laboratory plays for science subjects" has remained a far cry. The innovation "Library Centred Teaching" was conceived to emphasise the dynamic role and the educational potentialities of the school library.

2. THE CONTENT OF THE INNOVATION:

(a) The conceptual basis of the innovation:

A quality school library programme is an instrument for educational excellence. "The education programme is strengthened in direct proportion to the quality of the school's library service, for the school library is the keystone of a quality educational programme" (Murray, 1967). The operational objectives of the school library programme are to enrich, to support, to vitalise and to implement the educational programme as it strives to meet the needs of each student. The constant aim of today's school library is "to encourage and to enable each student to achieve the optimum of his potential as a learner, as a citizen and as a human-being" (Davies, 1969).

The use of library is expected to promote self-reliance on the part of students, develop in them a love for books and infuse in them a critical attitude ^{when} which they gather information from diverse sources, compare and contrast the facts collected.

(b) The Mechanics of the Innovation:

In every classroom under the project, a variety of text books and other supplemental reading materials was stocked. The teacher initiated a discussion on a topic which crystalised into a few questions. Students were then asked to find answers to the question. Students went about ~~their~~ task independently or in groups of 5 to 8 persons. They selected books, read the books and searched for information to find answers to the questions. If necessary, they went to the general library to refer to other books. Then the

students got together and reported the answers they had found for the questions. The answers were discussed critically, edited and supplemented wherever necessary. The teacher just acted as a guide and students did the active learning.

(c) Sample for Study:

This innovation was introduced in 25 high schools in four districts of Tamil Nadu. The innovation was reported to continue in 7 schools and discontinued in other schools. The sample for study consisted of ten schools, in five of which the innovation was continued. Questionnaires were collected from 10 heads of schools and 90 teachers. 4 heads, 12 teachers and 20 students were interviewed. The Project Co-ordinator was also interviewed.

(d) Documents studied:

The following documents were studied: (1) The initial letter from the Honorary Director, South India Teachers' Union Council of Educational Research to the heads of participating schools. (2) The details of the project issued at the seminar of participating schools. (3) The report sent by Project Co-ordinator to the National Council of Educational Research and Training. (4) Records maintained in the schools relating to the project.

3. OBJECTIVES, DESIGN AND TYPE OF THE INNOVATION:

The innovation had for its objectives: (1) to change the customary usages and practices; (2) to invent new ways of dealing with problems; (3) to form part of self-renewal exercises and (4) to fill a void in the existing system.

The innovation was designed as either an addition to a current practice or restructuring of the existing practice. The innovation was methodological in character.

In ten schools, the innovation was introduced in all classes, while in the other ten schools, it was introduced as an experimental project in one section in each of the standards.

4. AWARENESS OF THE INNOVATION:

All the respondents had become aware of the innovation ten years ago. During interview, it was gathered that they were introduced to the concept in 1969 when they received a letter from the Honorary Director, South India Teachers' Union Council of Educational Research and Training (SITUCER), inviting them to participate in the project undertaken with a grant from NCERT. The source of the idea for them was the SITUCER and they were not aware of any earlier primary source. The Honorary Director, SITUCER could not also trace any source other than the Project Advisory Committee of SITUCER. The overall reaction to the innovation was positive and they considered (1) the idea was a proven educational ideal (2) it was a panacea for their ills and (3) this was just an experiment. They were enthusiastic because the research wing of their own professional organisation had taken up such a project for the first time and they were eager to implement the same successfully.

5. ADOPTION OF THE INNOVATION:

All the respondents reported to have got interested in the idea as soon as they became aware of it. The idea appealed to them

for the following reasons (1) It was a probable solution to their problems; (2) Its novelty was appealing (3) It would in the longer run pay dividends and (4) It was sponsored by the Teachers' Union. The simplicity of the concept also attracted some to the idea.

Each participating school was asked to depute its headmaster and one other teacher to a Workshop held by the SITUCER at Madras to discuss the modalities of the innovation. They had a detailed discussion at the workshop and a handbook was issued to the schools describing in detail the mechanics of the innovation. The respondents reported that after getting details of the idea, they had a clear understanding of the idea, that the objectives were worthwhile and that there was a need for the particular innovation.

The delegates to the workshop on their return conducted a seminar of their colleagues when they conveyed to them the information regarding the innovation. Almost all teachers were reported to have welcomed it. The idea after discussion at the staff meeting, was put into operation as it was in its original form though ⁱⁿ two schools small minor changes, more administrative than technical were made.

The overall reaction of the teachers to the innovation was positive with regard to the following statements (1) They had a clear picture of what it was about (2) They agreed with its objectives; (3) They believed that it would work here; (4) They believed it was worthwhile to do this. They were neutral to the

statements (1) They believed the idea should be given the top priority and (2) They knew how they would have to change.

The innovation had been institutionalised in five schools while in five other schools it had been discontinued. The reasons for adoption of the innovation was given as 'This was relatively easy to understand and use'.

The important changes that had come about in the school after the adoption of the innovation were: (1) The library had become better organised and better furnished (2) The librarians who were all untrained were deputed for short training programmes. (3) The classification of books subject-wise and class-wise took place (4) The old text books came to be used (5) Students became library-conscious.

6. THE ADOPTER CONTINUUM:

The innovators were on the high side and the laggards on the low side of the linear continuum with regard to social participation, cosmopolitanness, change agent contact, movement with colleagues, exposure to media, knowledge of innovations, empathy, rationality, attitude toward risk, aspiration and opinion leadership while it was the other way about ~~with~~ regard to dogmatism. The innovators were more modern in their norms while the laggards were traditional.

Tables 1 and 2 present the mobility of adopters. While Table 1 reports about the adopters in schools ~~where~~ the innovation had been institutionalised, Table 2 gives details about the teachers in schools where the innovation had been discontinued.

TABLE 1 : THE MOBILITY OF ADOPTER CATEGORIES IN THE COURSE OF ADOPTION IN SCHOOLS WHERE THE INNOVATION WAS INSTITUTIONALISED

From \ To	I	EA	EM	LM	L	Total
I	2					2
EA		9	14	4		27
EM			32	18		50
LM				12		12
L					-	-
TOTAL	2	9	46	34	-	91

Upward Movement = 36.

Downward movement = Nil

TABLE 2 : THE MOBILITY OF ADOPTER CATEGORIES IN THE COURSE OF ADOPTION IN SCHOOLS WHERE THE INNOVATION WAS DISCONTINUED.

From \ To	I	EA	EM	LM	L	TOTAL
I	6					6
EA		48	13			61
EM			52	5		57
LM				7		7
L					4	4
TOTAL	6	48	65	12	4	135

Upward movement = 18.

Downward movement = Nil

7. ROLE OF CHANGE AGENT:

The S.I. T.U. Council of Educational Research and Training was identified as the Change agent though a few teachers had responded 'Headmaster' as the change agent. The change agent had assisted the client system in (1) developing a need for change in them. (2) establishing a change relationship with them. (3) diagnosing their problems. (4) Creating an intent to change in them and (5) translating the intent to action. Though the change agent had tried to stabilise the change so as to make it institutionalised, it could not do so for reasons given elsewhere in the case report. The change agent was found to be a very effective motivator. The change agent influenced most of the teachers and his role was described as 'highly rewarding' and 'quite helpful'. The change agent was reported to be 'friendly and understanding' and 'democratic'. The change agent exercised considerable influence in the decisions of the school. The change agent was the academic wing of the oldest teachers' union in Asia namely The South India Teachers' Union which had brought to the teachers several benefits like uniformity of scales of pay under all types of managements, government managed triple benefit scheme for teachers, upward revision of pay scales, reduction of work load of teachers etc., It was represented on the Board of Secondary Education and on all other Committees of the Government related to education. This innovation was initiated at the height of its glorious period before other unions came into existence.

8. ROLE OF OPINION LEADERSHIP:

More than one opinion leader were reported to exist in each school. While many of them did not influence the teachers with regard to the innovation, it was reported that the change agent, the SITUCER maintained a close link with some of the opinion leaders who were also active members of the Teachers' Union for purpose of ^{monitoring} maintaining the information regarding the implementation of the innovation. In some schools, the headmasters themselves were stated to be the opinion leaders.

9. DISSEMINATION OF THE INNOVATION:

This innovation was an NCERT aided project and hence had necessarily to confine itself to a few select institutions due to constraints of finance and research design. No effort was expected to disseminate knowledge of the innovation to other schools. However it was found that the idea was passed on to other institutions through informal meetings with the teachers. The Education Department Officers who took note of the innovation during the inspection of the schools also passed on the idea to other schools.

The reporting about the innovation in the journals of the S.I.T.U., and S.I.T.U.C.E.R. also draw the attention of some headmasters and teachers who approached the schools for information about the innovation. More than 5 schools were reported to have adopted the innovation with slight modifications. The innovation was continued in some and discontinued in others.

10. CAUSES AND EFFECT OF RESISTANCE:

No resistance to the innovation was reported. What was the reasons for the absence of any resistance to the innovation? The main reason was that it did not increase the work load of the teachers and teachers did not resist the innovation. It involved a good lot of work on the part of students and they had to read a good deal, search for answers and write reports. They did not resist the innovation for the following reasons: (1) The novelty of the innovations was appealing. (2) The closed doors of the library shelves were opened to them. Actually, four schools switched over to open-access system. (3) It increased their self-confidence and they were able to face tests and examinations more confidently. (4) It gave them a self-esteem (5) Their parents also encouraged them or appreciated their newly cultivated study habits. (6) Preparation of project reports added a new dimension to their learning.

11. FACTORS FOR CONTINUANCE AND DISCONTINUANCE OF THE INNOVATION:

The innovation had been continued in five schools and discontinued in five other schools.

Factors that favoured the continuance of the innovation were as follows. (1) The idea was good and easy to practise. (2) The innovation did not need much of finance (3) The benefits were visible in the use of libraries. (4) There was an improvement in the attitude of students to learning; (5) The innovation was sponsored by a teachers' union (6) The project Co-ordinator exercised a persuading influence.

Two factors were given out mainly for the discontinuance of the innovation: (1) Change of syllabus (2) Nationalisation of text books. The innovation required a good number of text books. There were more than 150 publishers in Tamil Nadu and every school would get specimen copies from at least 30 publishers in each subject for each class. The schools had therefore scores of different text books written for the same syllabuses. This helped them in organising the project effectively with multiple text books. In 1972, a thorough revision of syllabus was undertaken and the syllabus was upgraded. Meanwhile the text books were nationalised and the Tamil Nadu Text Book Society published one and only one text book in a subject for a standard. Further, publishers who used to subsidise supplementary readers out of their profits in the text book trade either stopped publishing supplementary readers or priced them at an exorbitant level. The schools were therefore denied access to multiple text books and supplementary materials. With the upgradation of the syllabuses in all subjects for all classes at the same time, schools were not able to enrich their library with books suited to the new syllabuses and to the different levels of students. The innovation had therefore been discontinued. Significantly three of the five heads of schools where the practice was discontinued had reported that the innovation had been 'suspended for the time being' and not discontinued though on the date of this study they could not readopt the same.

While the factors for discontinuance were common for all schools, what were the factors that motivated a few schools to continue the innovation? The ingenuity of the heads and teachers of schools, the financial support lent to the schools by their managements and the deep commitment borne out of conviction to the innovation were the prime factors that induced these schools to continue the practice. These schools endowed with an enriched library, a large number of periodicals and parental support were able to continue the innovation.

12. THE MODEL OF CHANGE:

(a) The Process Model:

This innovation had been promoted to develop self-learning among students and make more effective use of the available facilities in the schools. The user was therefore the starting place; with concern for the consumer's real needs. Diagnosis had preceded the identification of solutions. The role of the change agent was non-directive, limited to providing the client system with guidance and training in how to do its own problem-solving. The importance of the use of the internal resources was recognised. The innovation could therefore be seen to follow the problem solving model.

(b) Strategies adopted:

The assumption was that the adopter was active, not passive and was interested in finding solutions to his problems. The strategies adopted were based upon a psycho-therapeutic model of change agent and adopter, in which, with the agent's collaboration,

the client was enabled to work out changes for himself. The value, rational and didactic strategies had been used.

(c) Type of Innovation Decision:

In all the schools, the practitioners were fully involved in the decision-making process with regard to the innovation. The change agent had stimulated interest and the client system in their innovation and it was the staff council that took the decision to implement the idea. Therefore the innovation decision was a collective decision. The role of the headmasters who were interested in the adoption of the innovation might be considered rather a catalytic one than one of authority.

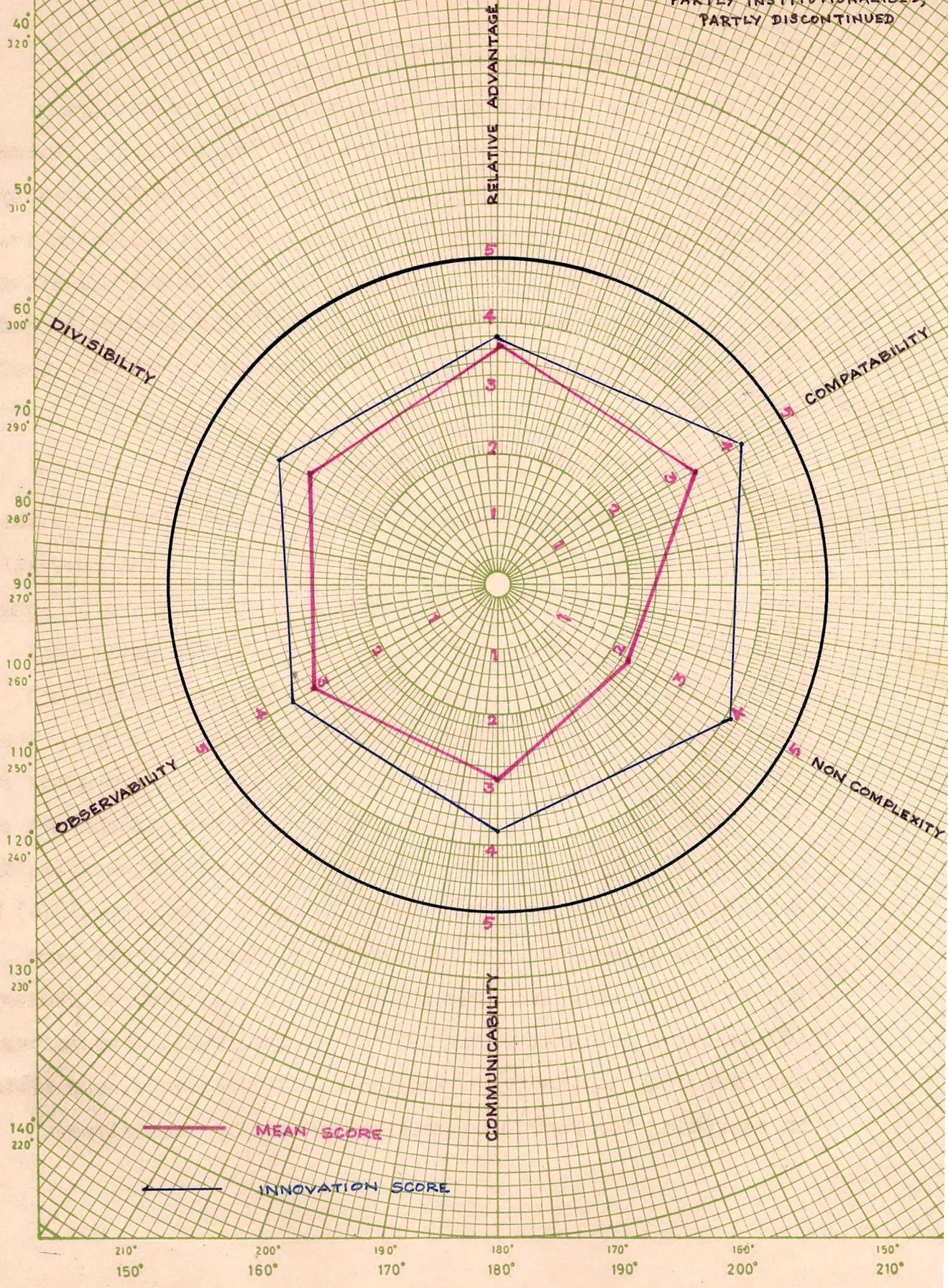
(d) Innovation Decision Period:

Schools were first intimated about the project and willing schools were invited to participate in the project. Sufficient time was given for the schools to consider and decide. After getting their consent, the orientation course was held at Madras for the headmasters and teachers, who on return to their schools explained the innovation to other teachers. A Project Committee was formed in each school. Preliminary arrangements like collection and classification of books, analysis of the syllabus etc, were then made. The time lag between the awareness and adoption stages was about 6 months. This time lag had helped in the proper implementation of the innovation with conviction.

9

30° 20° 10° 0 350° 340° 330°
330° 340° 350° 0 10° 20° 30°

CASE STUDY No. 9
LIBRARY CENTRED TEACHING
PARTLY INSTITUTIONALISED,
PARTLY DISCONTINUED



13. EVALUATION OF THE INNOVATION:

The innovation was given high scores on the factors 'relative advantage', 'compatibility', 'divisibility', 'communicability', and 'observability' and a low score on 'complexity' factor. It had therefore a favourable score on all accounts. The implementation of the innovation was smooth and effective. There was no resistance from any quarter. The innovation had been perceived by the practitioners as a very simple but useful one.

14. CONSEQUENCES OF THE INNOVATION:

No unfavourable consequences had been reported while the following consequences could be identified. (1) The innovation promoted a kind of self-confidence among the teachers to take up projects. This could be seen from the fact that after this project many schools had taken up projects individually and collectively with or without NCERT assistance. (2) Since the innovation was a NCERT aided project and required a project report on a scientific basis, headmasters were exposed to the art of writing project reports. (3) The collection and classification of books according to standards and subject took place. (4) The use of the library improved vastly. (5) The libraries were enriched with addition of books suited to the level of students (6) Teachers got trained in the art of initiating discussions and preparing topics for assignments. (7) Students were trained in searching for facts and writing answers by themselves.

15. A CRITICAL APPRAISAL OF THE INNOVATION, IN RELATION TO ITS OBJECTIVES:

The main objectives of the innovation were: (1) to develop self-learning and skills among students (2) to utilise library as a learning centre (3) to promote among teachers a need to adopt self-learning techniques and make full use of materials other than prescribed textbooks and (4) to develop libraries in school. It was gathered that the innovation had influenced the realisation of the objectives, though to a smaller extent. Students reported that they had gained self-confidence and begun to visit the library more and more. Libraries were better used in the schools and the class libraries and the general libraries showed improved issues of books to students. Teachers also began to use some of the self-learning techniques, by asking students to refer to dictionary, collect materials from encyclopaedias and other books in the library and bring out student projects in large numbers. An awareness to improve the library in a planned and systematic manner was visible in the project schools.

CASE STUDY No.10

1. Name of the Innovating Practice :: Staff Incentive Scheme
2. Type of Innovation :: Organisational
3. No. of schools practising the innovation :: 10 Schools
4. Agency introducing the Innovation :: Managements of Schools
5. Change agent :: Managements, Headmasters
6. Opinion Leaders :: Teachers
7. Resisters :: Internal to the system - Teachers
8. Causes of Resistance :: Annoyance at differential treatment.
9. Stage of Innovation :: A few continued, a few discontinued
10. Process Model of Change :: Problems solving Model
11. Type of decision :: Authority decision
12. Type of strategy :: Authority, economic and psychological strategies
13. Time lag :: No time lag
14. Evaluation of the Innovation :: Relative Advantage : High
Compatibility : High
Complexity : Low
Communicability : High
Observability : High
Divisibility : High
15. Size of sample for study :: 10 Schools

STAFF INCENTIVE SCHEME

1. INTRODUCTION:

The management of Educational Institutions is under three different agencies in Tamil Nadu: Government, Local Bodies and Private. All government schools are managed by the Director of School Education. School Education has been made free in Tamil Nadu from 1964 onwards. Since then, the approved teachers' salaries in Private schools are being paid by the Government. In addition, the government takes the responsibility of the payment of superannuation benefits for teachers in private schools as for the government employees, namely, pension amounting to about 50% of the salary, a gratuity equivalent to 16.5 months' pay and family pension for the family in case of death of teacher while in service or after retirement. The Government also pays a lumpsum of Rs.10,000/- on death of a teacher while in service. Even before free education came into force, education was free to about 87% of the student population and the liberalised grant-in-aid enabled many of the schools to earn surplus income which could be spent on teacher welfare and school improvement. Some of the enlightened managements introduced incentive schemes for the teachers in order to attract better type of teachers and motivate teachers to give their best to the institution. Though the schemes were of diverse forms, some of the economic incentive schemes alone were taken up for the present study.

2. THE CONTENT OF THE INNOVATION:

(a) The Conceptual Basis of the Innovation:

A number of studies have been made to identify factors that motivated employees to work effectively and that serve as dissatisfier

Prof. Fredrick and Henzberg of the Western Reserve University (Altman and Hodges, 1979) analysed the motivations of engineers and accountants in Pittsburg area and found that the levels of job satisfaction, motivation and Productivity were closely related to two sets of factors (1) Dissatisfiers made up of such matters as pay, supplemental benefits, company policy and aid administration, behaviour of supervisor, working conditions, and several other factors somewhat peripheral to the task. Though traditionally perceived by management as motivators of people, these factors were found to be more potent as dissatisfiers. High motivation does not result from their improvement, but dissatisfaction does result from their deterioration. (2) Motivators consisting of achievement, recognition, responsibility, growth, advancement, and other matters associated with the self-actualisation of the individual on the job. Job satisfaction and high production was associated with motivators, while disappointments and ineffectiveness were usually associated with dissatisfiers.

The schools under the case study considered financial incentive as a motivator and the present case study was confined to the economic incentives only.

(b) The Mechanics of the Innovation:

Four different types of incentive schemes were identified.

(1) Incentive for performance: Teachers who produce good results in the examinations were given a lumpsum payment. While in two schools, the scheme was confined to teachers preparing pupils for the government examinations, in two other schools, it was extended

to performance in the school annual examinations also. No scheme was identified with regard to teachers in charge of non-examination subjects like art, physical education and craft.

(2) Incentive for extra work: Teachers who volunteered to take up extra work like scouting, library service, Junior Red Cross and those who were entrusted with such work were granted additional emoluments in the form of extra increments.

(3) Incentive for Attendance: A teacher in Tamil Nadu is entitled to (i) casual leave of 20 days in a year (ii) 18 months medical leave in service (iii) earned leave at $1/132^{\text{th}}$ of service and (iv) unearned leave on half pay for 6 months. Earned leave not availed of may be encashed. Since the tendency on the part of teachers is to exhaust all types of leave they are entitled to, some managements introduced a scheme by which teachers might get cash benefits for leave not taken. The schemes were confined to casual leave only. Three variations were identified. In two schools, cent per cent attendance alone qualified a teacher for a lumpsum payment. In one other school, a teacher who had availed of less than 5 days of casual leave was paid cash equivalent to the number of days of leave he had not availed. In another school, a slab system of compensation was adopted. While cent percenters got cent percent cash equivalent, others were compensated as follows: (1) Availed less than 4 days: 80% (2) Availed ^{between} 4 and 7 days 60% (3) Availed between 8 and 10 days : 50% (4) Availed 11 or 12 days: 40% (5) Availed more than 12 days: Nil. The percentage was worked on the cash equivalent of number of days of casual leave not availed.

(4) Incentive for Service: Some managements made extra payments to attract good teachers and retain them in service. Many managements sanctioned extra increments years back when there was ^{death} death of teachers, but the extra increments originally sanctioned had all been absorbed when the scales of pay were revised. Two kinds of incentive schemes were still in vogue. (i) Bonus: This was in the form of an annual payment to permanent teachers ranging from 15 days' basic pay to 1 months' total emoluments. While in three schools, the payment was made in the form of cash, in one school, it was held in the form of fixed deposits, yielding a compound interest of 15% per annum and payable at the time of retirement. (ii) Gratuity Scheme: This was in the form of a payment at the time of retirement or death while in service. In two schools, a lumpsum calculated at Rs.100 per year of service was paid. In two other schools, the management had taken a group gratuity insurance policy and paid the annual premia. The L.I.C. made payments equivalent to 15 months' pay on retirement or death, subject to certain minima prescribed. Under both schemes, no conditions had been prescribed to receive the bonus or the gratuity.

(c) Sample for Study:

This innovation was identified in ten schools, all of which comprised the sample for study. In one school, four different variations of the scheme were traceable. In all, fourteen incentive schemes were studied. Questionnaires were issued for each type of scheme. 14 Questionnaires were collected from ten headmasters. Nine teachers were selected at random from among the beneficiaries of each of the 14 schemes. All the ten heads of schools and 20 teachers were interviewed. One District Educational Officer was also interviewed

(d) Documents Studied:

The following documents were studied: (1) Circulars sent with regard to the operation of the schemes. (2) Registers and other records maintained with regard to calculation and disbursement of benefits. (3) L.I.C. group Gratuity Scheme (4) Agreements and deeds entered into between managements and teachers.

3. OBJECTIVES, DESIGN AND TYPE OF THE INNOVATION:

The objectives of the innovation had been reported to be to fill a void in the existing system and encourage teachers to perform better. The representatives of the managements reported that the schemes were introduced. (1) to reward past performance (2) to motivate better performance in future (3) to make the teachers feel they worked in an institution which cared for them and (4) to attract better type of teachers into their schools. The innovation had been designed as an addition to the current practice and its character was organisation. While with regard to five schemes, all the teachers were involved, 21% to 80% of the teachers were involved in seven other schemes and less than 20% of the teachers were covered in the other two schemes. No students were involved in any of the schemes.

4. AWARENESS OF THE INNOVATION:

All the teachers became aware of the innovation when it was introduced in their schools. But they were aware of similar incentive schemes which were in operation at one time or other in some schools. Though most teachers identified their own managements as the source for the innovation, a few had pointed out other managements as the source for the innovation. The overall reaction to the innovation was positive.

During interviews with teachers, it was found that most of the teachers did not know how the scheme was operated. It was particularly so with regard to the L.I.C. Gratuity Scheme and encashment of unavailed casual leave on a slab system. Most teachers in the school where the bonus was on a deferred basis did not know how much amount had been accumulated in their accounts and what amount they would receive when they retired. Even payment of the deferred bonus was not done at any function, but was made individually to the teacher concerned.

The source for the idea for the managements was industry. It should be noted that out of the ten schools practising the innovation, nine were managed by industrial houses directly or through trusts formed by them. Even the single school not managed by any industrial house was situated in an industrial belt and many of the members of the managing body of the school were owning some business or other where such incentive schemes were not uncommon.

5. ADOPTION OF THE INNOVATION:

Being an authority sponsored innovation, it was generally put into operation once a decision was taken. The factors of interest were diverse. While all of them responded favourably to the statements "It would add a new dimension to the functioning of the school", "None else had tried it in my circle. Let me be the first", "It had prestige value" and "It would in the longer run pay dividends", a few opined "It was a probable solution to a problem they were facing".

Much information could be collected at the time of the interview. The reasons given out by the managements for introduction of bonus and gratuity schemes were (1) They desired to extend the benefits given by them in their industrial establishments to the teachers whose pay was considerably low when compared to the industrial labour. (2) They desired to attract better type of teachers. (3) They desired to retain teachers in their own school until their retirement. (4) They thought that incentive payments would motivate the teachers to perform better.

With regard to collection of further information about the innovation, informal discussions among heads of schools were reported when they exchanged ideas about the operational problems of the schemes.

It was gathered that none of the incentive schemes was discussed at a staff meeting. Teachers were considered as beneficiaries and therefore no consultation with them was thought necessary. The schemes were in general welcomed by the teachers, though some teachers expressed their reservations with regard to certain aspects of scheme which would be discussed at a later stage.

The stages at which the innovation stood differed from scheme to scheme and from school to school. The scheme of incentive for performance was continued in only one school and discontinued in three other schools. The incentive scheme for extra work was being continued in the only school which had introduced it. Of the four schools which introduced the scheme of incentive for attendance, three had discontinued and only one school continued the scheme.

All the three who had discontinued the scheme planned to reintroduce the scheme shortly. The bonus scheme was in operation in two schools and two schools had discontinued it. The gratuity scheme introduced in two schools had been institutionalised due to contractual obligations with the L.I.C. and could not be withdrawn.

The changes in the picture of the school brought about by the innovation were varied. One common feature was the initial enthusiasm on the part of the teachers. They thought they were being recognised and their work was being rewarded. While the scheme of incentive for performance, attendance and extra work had made the teachers work hard and produce results, the scheme of bonus and gratuity had not brought any change in the school.

6. THE ADOPTER^{ER} CONTINUUM:

The characteristics usually attributed to the adopter categories were reported. One of the basic objectives of the innovation was to motivate teachers to perform better, involve themselves more actively in the activities of the school and bring credit to the institution. It might therefore be seen that an ~~indirect~~ attempt was made to upgrade the categories of adopters. Though the adopters had not much role to play with regard to the present innovation, an attitudinal change was expected of them as a result of the innovation. Table 1 gives the change in the adopter categories. About 13% of the staff moved from a lower category to an upper one, while no downward mobility was reported.

TABLE 1 : THE MOBILITY OF ADOPTER CATEGORIES IN THE COURSE OF THE ADOPTION OF THE INNOVATION.

From \ To	I	EA	EM	LM	L	TOTAL
I	26	2				28
EA		67	15			82
EM			83	17		100
LM				61		61
L					-	-
TOTAL	26	69	98	78	-	271

Upward Movement = 34

Downward Movement = Nil

7. THE CHANGES AGENT AND HIS ROLE:

The managements of schools were identified as the change agents in nine schools and in the other school, the headmaster was reported to be the change agent. The change agent had assisted the client system in establishing a change relationship (2) in creating an intent to change and (3) in stabilising change and preventing discontinuance. A minority of the client system further believed that the change agent diagnosed their problems. The change agent influenced most of the teachers. While the role of the change agent was described as 'quite helpful', the change agent himself was variedly considered as 'Friendly and understanding', 'authoritative' and 'cosmopolite'. The change agent was reported to have

higher education in three schools and to have higher status in all the schools, while his values were considered the same in 6 schools. The management - change agent had contact with the teachers mostly through the headmasters. In two schools, the management had contact with the teachers through one or two teachers who were related to the management or who belonged to their caste. During the interviews, it was gathered that the change agents were desirous of their institutions being considered as excellent ones and being different from other institutions. This desire prompted them to promote the innovation. Except in three schools, the management-change agent never visited the school except for annual day and any other important functions. In three schools, the managers visited the school frequently and kept themselves fully aware of what was happening in the school.

8. ROLE OF OPINION LEADERSHIP:

Opinion leadership were reported in every school, but they played no significant role in influencing the decision to install or implement the innovation.

9. DISSEMINATION OF THE INNOVATION:

The innovation was promoted by the management and involved financial outlay. The client system had limitations in disseminating the innovation. However, through informal meetings with teachers of the other schools, the benefits extended to them were explained. The headmasters of other schools learning of the incentive schemes prevailed upon their managements to introduce

similar schemes in their schools. The Inspecting Officers also spread the idea to the financially sound institutions for implementation. The managements as such had not taken any steps to disseminate the innovation.

10. RESISTANCE : CAUSES AND EFFECT:

Resistance was reported to the following schemes of incentives (1) Incentive for performance (2) Incentive for attendance and (3) Incentive for extra work. No resistance was reported to the bonus scheme and gratuity scheme. It is significant that the last two schemes catered to all teachers and extended the same benefits to all teachers. The first three schemes distinguished certain categories of teachers for payment of incentives. This was resented by teachers - the beneficiaries as well as the non-beneficiaries. The causes of resistance were as follows: (1) Incentive for performance : The scheme covered only those presenting students for public examinations. Other teachers were not covered except in 2 schools. Teachers felt that they had laid the foundation for the good performance of students at the public examination, but the incentive payments were confined to teachers handling the final year only. Further, teachers of non-examination subjects felt they also contributed to the promotion of the image of the school, but they felt aggrieved they were left out of the scheme. All teachers, covered or not under the scheme, felt they had no control over the input i.e., the initial standards of students and therefore it was not scientific to assess their hard work through the performance of students at the public examination which was influenced by other factors as well. Moreover, the scheme put a lot of stress and strain on them and emotionally they were very much disturbed all through the year though they found some

happiness when they were rewarded. (2) Incentive for attendance: Teachers felt they were being denied their rightful due. Even absence on genuine reasons - hospitalisation, death of kith and kin - deprived them of the benefits under the scheme. The headmasters reported that while the scheme reduced to a small degree teachers' absence some teachers attended school with illness - one teacher was reported to have come to the school with 104°F temperature - and were unable to do their duties. A perusal of the attendance records showed that the percentage increase in the matter of teachers availing of less than 10 days of casual leave was less than 10% in all schools. Those who had registered 100% attendance after the introduction of the scheme were those who were taking less than 6 days of leave before the introduction of the scheme. The habitual leave-takers were not influenced. (3) Incentive for extra work: Teachers felt this scheme was to patronise the sycophants and hence non-beneficiaries stoutly resisted the scheme. The effects of resistance were: (1) The incentive for performance was extended in two schools to cover teachers of lower classes also. (2) The incentive scheme for attendance which was for 100% attendance was modified to give benefits on a slab system. The scheme was discontinued in one other school.

11. FACTORS FOR PROMOTION OF CONTINUANCE AND DISCONTINUANCE OF THE INNOVATION:

The life of the different schemes were as follows:

- (1) Incentive for performance : Continued in all the four schools.
Modified in two schools.

- (2) Incentive for extra work : Continued in the only school.
- (3) Incentive for Attendance : Continued in three schools and discontinued in one school. Modified in one school.
- (4) Payment of Bonus : Continued in one school and discontinued in two other schools.
- (5) Payment of Gratuity : Continued in both the schools.

The school which introduced four of the schemes at different times had continued two schemes and dispensed with the other two. The school which introduced two variations of the scheme had continued both the schemes. Of the ten schools which introduced the innovation, nine schools continued one or two other schemes and only one school had discontinued the innovation. Of the fourteen different schemes in operation in the ten schools, eleven schemes were continued in nine schools. Three schemes were discontinued in two schools. The decision to discontinue was taken by the management in both schools. The bonus scheme was withdrawn in two schools. While the scheme was discontinued in one school due to introduction of free education and consequent depletion of school finance, the scheme was replaced by gratuity scheme in the other. The reasons given for the change was that they liked to give permanency to the incentive schemes. While payment of bonus depended upon the will and pleasure of the management, the gratuity schemes was a permanent one due to the contractual obligations between the management and the L.I.C. No advance intimation was given to the teachers about the withdrawal of the scheme and ~~to~~ the teachers were put to some disappointment on the due dates for disbursement of bonus.

The scheme of incentive for attendance was withdrawn ~~for~~ ^{from} one school due to gross 'abuse' of the scheme by the teachers. The scheme ensured physical presence of the teachers alone and was not linked to performance. The management therefore withdrew the scheme and the teachers welcomed the withdrawal. It was noteworthy the school concerned had alternate incentive schemes.

The factor for continuance of the scheme was the prestige of the management. Even with regard to schemes which evoked teacher protests and resistance, the managements did not withdraw the schemes as they thought the schemes were for the benefit of teachers and the schools and they did not bother about reactions of individuals. The managements most of whom owned industries felt the financial commitment was negligible, compared to the payment of incentives in their industrial establishments. They thought it was their duty to provide for some basic incentives for teachers. No other factor was discernable for continuance of the innovation.

12. MODEL OF CHANGE:

(a) The Process Model:

The objective of the innovation was to motivate the teachers, create an in-feeling among them and improve their performance. The assumptions could therefore be considered as (1) The teachers' performance required to be improved, (2) The in-feeling among them was absent or not adequate and (3) the teachers were not adequately motivated. Yet another fact taken note of was that

the teachers were not sufficiently remunerated and that they need to be compensated over and above the government approved pay and emoluments. A problem was also confronted when the schools were not able to get the best type of teachers and ensure their continuance in their schools. The innovation was born as a probable solution to these problems. The process model adopted was therefore the problem-solving model.

(b) Strategies adopted:

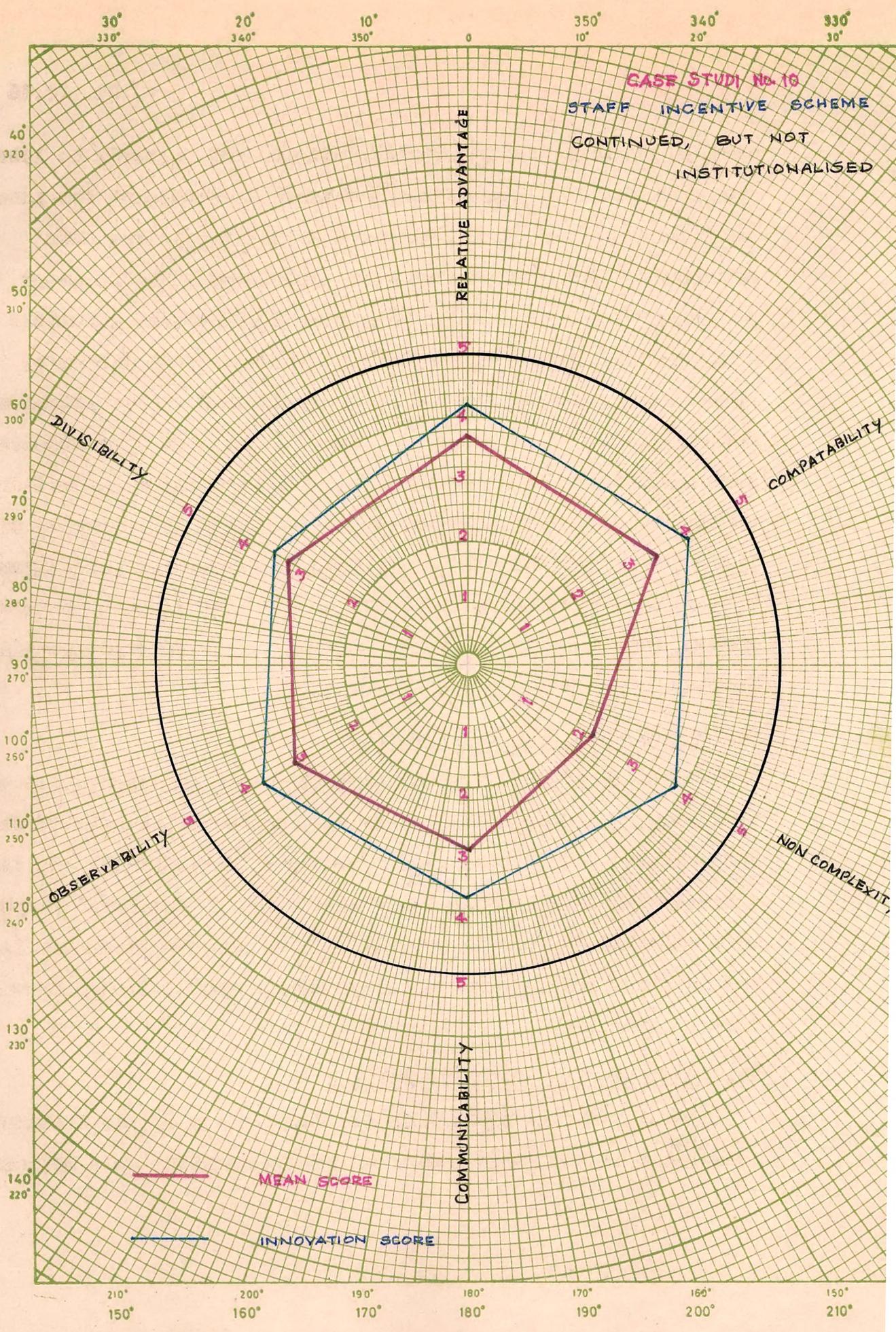
It was through an executive direction that the innovation was introduced and hence the authority strategy was adopted. It might also be seen that the beneficiaries were given certain financial benefits and the economic strategy was evident. Teachers felt that they were being cared for by the management and hence psychological strategy was employed to a certain degree.

(c) Type of Innovative-decision:

The decision to initiate, introduce, implement and institutionalise the innovation was taken solely by the management in its superordinate position. Hence it could be noted that it was an authority decision. Even where headmasters desired to have some schemes of incentive introduced, it was the management who selected the scheme and introduced the same. Similarly, the decision to discontinue or modify the innovation was also purely an authority decision.

(d) Innovation-decision Period:

The various schemes introduced were known to the change agents for a long time as the schemes as they were or in slight variation



were in vogue in the industries. It was not possible to locate the time when the practitioners desired to introduce the innovation in their schools. It was gathered during interviews with managements that the schemes were introduced with the least possible time lag. The introduction of innovation coincided with the boom-period in industry. With regard to teachers, they became aware of the innovation only when it was introduced and an element of surprise was also evident when the announcement regarding the innovation was made. The innovation was withdrawn in one school after a period of six years and there was no time lag between the decision to discontinue and the actual discontinuance. In another school while the decision to discontinue a particular scheme was taken, it was announced an alternate schemes was in consideration for being implemented.

13. EVALUATION OF THE INNOVATION:

There were two different perceptions of the innovation-one by the change agents and the other by the beneficiaries of the innovation. Both groups gave favourable scores on all the six characteristics of the innovation. While the teachers' responses were obtained through their responses to the questionnaire issued to them, the opinion of the change agents was collected through formal interview.

14. CONSEQUENCES OF THE INNOVATION:

No significant changes in the functioning of the institutions consequent to the introduction of the innovation could be identified

Rather a confusing picture only emerged. While the scheme motivated a few teachers to take up activities like Scouting, etc., no acceptable definition for 'Extra work' became possible and teachers demanded extra payments for any work which they considered as not a legitimate part of their duties and which the headmaster and the management felt was part and parcel of their normal functions. This had led to conflict and had adversely affected the organisation of club activities and co-curricular activities.

15. A CRITICAL APPRAISAL OF THE INNOVATION IN RELATION TO ITS OBJECTIVES:

The objectives of the innovation were: (1) to motivate the teachers to perform better (2) to improve teacher-management relations and (3) to promote the image of the school. A study was made to find out whether the student performance in the S.S.L.C. Public Examination showed any marked improvement. In the schools which introduced bonus and gratuity schemes, not only was there no improvement in the results but downward trend was discernible, since the scheme was introduced. A sense of security and the absence of linkage with productivity were the stated to be the reasons for the deterioration. The incentive for performance ensured better performance as all the schools that introduced the scheme reported that their S.S.L.C. Public Examination results had improved and that almost all the schools reported results ranging from 90% to 100%. The incentive for extra work had led to conflicts and while some activities got a spurt, others showed a decline. The incentive for attendance did not promote

any improvement in teacher attendance. Teachers who had registered 100% attendance after the introduction of the scheme were those who had taken less than 6 days of leave prior to the introduction. Only one teacher had attended all days in two consecutive years. Of those who had taken more than 12 days of leave in each of the three years prior to the introduction of the scheme, only one was eligible for incentive payments, that too, for only one year. Hence, the scheme did not help to reduce teacher absence. Hence all schemes, except the incentive for performance, had failed to achieve their objectives. This is in line with the findings of several studies in innovation which say that economic incentives will not alone achieve results, but they should be combined with recognition, affiliation and other factors.
