RESEARCH  PROCEDURES

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## 1. INTRODUCTION:

Education as a social system has been the subject of
constant innovation and change.  It is only within recent
decades, however, that the anatomy of the process has begun
to be studied in a systematic way.  Whether the system has
been involved in a new structure such as the introduction
of the Ten plus Two pattern of education or in a new method
of instruction such as English Language Teaching Campaign
or in a new curriculum like the introduction of Modern
Mathematics and Enriched Science, few changes seem to have
been planned and organised in sufficient detail to predict
or control the consequences.  For example, it may be that
the short-term effect of vocationalising the higher secondary
course will not be a diversion of a sizable number of students

from general education, but rather an increased rush for
higher education due to greater intake in higher secondary
classes than in the Pre-university class, which in turn
not only defeats the objective of vocationalisation but
puts a greater strain on the institutions of all these
higher education. The long-term effect may be a resolution
of all these more immediate problems and a better educational
system generally may evolve in due course.

Usually the attempt has been made to reconstruct the
nature of the process of change after the event in order
that commitment of the same kind of errors might be avoided
on the next occasion. It is only when the need for major
reforms in education has been fully recognised and accepted
that efforts are taken to examine more closely the elements *that*
assists or hinder the enactment of change. It will then be
possible to plan the process in such a way as to ensure that
the changes made are more durable, measurable and similar to
the original version of the innovations proposed.

The whole subject of educational change and innovation
is a very complex one because it has to be studied at several
levels. There is the level of the individual being changed or
changing others, there is the institutional level, then the
community level, and finally the wider environment in which
some innovations are acceptable while others clearly conflict
with existing values.

It is therefore necessary that innovations at their various
stages of implementation are studied at great depth.

## 2. OBJECTIVES OF THE STUDY:

The study has been undertaken to describe specified innovations with regard to their strengths and weaknesses and their acceptability or rejection and the causes thereof. The objectives may be more explicitly stated as hereunder.

### General objectives:

(1) To find out factors that promote introduction of innovations. (2) To increase knowledge of the positive factors facilitating the institutionalisation of innovations. (3) To examine the process of dissemination 6f innovations. (4) To ascertain the factors that lead to the discontinuance of certain innovations. (5) To identify factors of resistance to change that may serve to block the implementation of innovations. (6) To describe the role of the change agents and opinion leaders in the implementation of innovations.

### Specific objectives:

(1) To collect details of the spread of the innovation. (2) To find out the objectives of the innovation as conceived by the change agent and the client. (3) To trace the flow of the channel of information about the innovation from the original source to the client. (4) To examine critically the process of adoption of innovation. (5) To describe the characteristics of the change agent, the opinion leader and the different types of adoption categories. (6) To identify the changes or movements from one category to another that take place amongthe adopters in the course of the adoption of innovation.

(7) To ascertain the role played by the change agents and the opinion leaders in the adoption of innovations. (8) To evaluate the innovations with regard to six specified characteristics. (9) To test the validity or otherwise of the hypotheses started in subsequent paragraphs.

(a)  Hypotheses:

Hypotheses form part of only such studies where the size of the sample of fairly big, and that the sample is stratified and randomised. It is beyond the purview of the case study type of researchers to draw generalisations because of the nature of the study which is an in-depth one and each case is a distinctly discrete and unique unit. However, it is found that with careful selection of representative cases, the case-studies can also be used for purposes of drawing generalisations and theorising (CERI, 1973).
S.Purushothaman (1979) had also attempted at testing hypotheses while he was adopting case study method. Based mostly on the findings of previous studies, the following hypotheses were framed and presented.

(1) Innovations succeed in schools with better physical and human input factors. (2) Innovations succeed more in established schools than in schools which are younger. (3) Innovations succeed in schools whose headmaster is older and experienced. (4) The teachers in schools where innovation succeed belong to relatively younger group. (5) Innovations succeed in schools which have continuity of leadership. (6) Innovations succeed in schools easily accessible to staff

and students. (7) The teachers in schools adopting
innovations are professionally motivated. (8) The type of
management of the school plays a significant role in
adoption of innovations. (9) Innovations evolved from
within the school system are more prone to institutionali-
sation than innovations motivated from external agencies.
(10) Innovations with longer gestation periods are more
often institutionalised than innovations introduced all
in a sudden. (11) (a) The innovators are on the high end
and the laggards on the low end on the high-low continum on
the following characteristics: (i) Social participation
(ii) Cosmopoliteness (iii) Change agent contact. (iv) Explosure
to inter-personal communication (v) Explosure to mass media
(vi) knowledge of innovations (vii) Empathy (viii) Rationali-
sation (ix) Attitude to risk (x) Aspiration (xi) Opinion
leadership. (b) It is the other way about with regard to
dogmatism. (c) Innovators are modern innorms while laggars
are traditional. 12 (a) As innovations get institutionalised,
there is a positive change in the characteristics of the adopters
and the migration from one category to another is from lower
to higher. (b) Where innovations are discontinued, it is the
other way about. (13) The change agents and the opinion
leaders play a significant role in the adoption or discontin-
uance of innovations. (14) Personal factors play a significant
role in resistance to innovations. (15) Innovations introduced
on authoritarian directives are discontinued once the directing
force withdraws from the scene.

(16) Innovations with high indices with regard to the factors
relative advantage, compatibility, complexity, divisibility,
communicability and observability are more prone to
institutionalisation than those with low indices on these
factors.

(b)  Selection of Variables:

A study of the doctoral studies conducted earlier in
India mentioned in the earlier chapter and interaction with a
few involved in the studies in the area of innovation enabled
the investigator to identify and select variables that will be
of relevance to the present study.

The variables selected were:  (A) Intrinsic variables
(inherent in the innovation itself) (1) The relative advantage
of the innovation (The extent to where an innovation is
perceived better than the idea it supercedes).  (2) Compatability
(The extent to which the innovation is perceived consistent
with existing values and needs of the institution)  (3) Complexity
(The degree to which the innovation is perceived as difficult
to understand and use)  (4) Divisibility (The extent to whcih
the innovation may be tried on a limited basis) (5) Communicability
{The relative ease of communicating the innovation to other
persons)  (6) Observability (The extent to which the results of
an innovation is visible to others.)

(B) Situational Variables (Connected with the school system
and its personnel)  (1) Age of the school  (2) Type of management
(3) Locality and accessibility of the school (4) Continuity of
leadership (5) Qualification service factors (6) Student turn over

(7) Physical facilities  (8) Innovation experience (9) Campus
peace  (10) Age and experience of the teacher  (11) Continuity
of service of the teacher in the same school  (12) Socio-
economic cultural background of the teacher (13) Educational
background of the teacher  (14) Professionalism of the
teacher  (15) The process model of change selected (16) The
adopter categories  (17) Role of change agent  (18) Opinion
leader role  (19) Resistance  (20) Dissemination
(21) Discontinuance.

In addition to consultation with earlier studies, research
scholars and research guides, the opinions of experienced
headmasters and teachers of schools and Educational Officers
were also sought.  There was unanimity among the members of
the jury about the choice of variables.

3.  THE DYNAMICS OF CASE STUDY:

(a) Definition:

Case study is "the examination of an instance in action".
(Walker 1980).  It is "away of organising social data so as
to preserve the untried character of the social object being
studied.  It is an approach which views any social unit as a
whole (Goode and Hatt, 1952).  The study of particular incidents
and events, and the selective collection of information
on biography, personality, intentions and values allow the
case study to capture and portray those elements of a situation
that give it meaning.  In educational research, the case study
worker may attempt to "study and portray the impact in a school

of a particular innovation, the experience of a curriculum
development project team, the development of an idea, the
influence of a social and professional nature, or a day in
the life of a teacher, administrator or pupil" (Walker, 1980).
Because of its aid in studying behaviour in specific, precise
details case study is termed 'the social microscope'
(Borgess, 1949).

(b) Use of case studies:

Case study methods have generally been utilised and
developed where there has been a clear need to confront the
idiosyncracy of individual instances, for example, in
attempting historical reconstruction, in biography, journalism,
and documentary film-making or where there has been no clear
vision of an appropriate theoretical base from which to operate,
as in applied social science research. Practitioner-disciplines
like clinical medicine, town planning and social work and
academic disciplines like anthropology and ethology have
developed procedures for using case study research cumulatively.
In the field of education, case study has been carried out
primarily as a piece of pure research directed to an audience
of research professionals. George and Louis Spindler have
edited the series 'Case studies in Education and Culture'
which included studies by Gay and Cole (1968), Singleton (1969),
Wolcott (1967), and Warran (1970). Some other case studies
are Smith and Geoffrey (1968) Becker (1961, 1968), Lacey (1970)
Hargreaves (1967), Shpman (1976), Grossetal (1971) Alderfer
and Brown (1975), Bentzin (1974).

## (c) The strength of Case Studies:

Despite an apparent increaing sophistication of research, there has been a growing sense of unease within policy-making bodies at the lack of fit between research and practice - a feeling that research defines its own problems ineffective of the problems faced by the practitioners and that its audience is primarily an audience of fellow researchers rather than its sponsors, subjects or fellow citizen. "While the main appeatl of measurement datas is that it is relatively easy to condense and so amendable to rapid handling, case study on the other hand offers some things to the practioner that conventional educational research does not" (Walker, 1980).

Louis Smith has summarised some of the aspects of the case study in relation to educational administrator as follows:

"Case studies have a quality of undeniability. That is, someone is actually doing something, it is not hypothetical. As such cases accumulate, in varying settings and with varying support, personnel and rationale, it becomes difficult to excuse one's own inaction. It forces one to back off from his 'rationalisations' and to confront the basic choices and dilemmas in values underlying his decisions in his district.

Second, the case studies are totalities, that is they have a 'holistic' or systematic' quality. By their very nature they constrain or attend to all the elements.

Third, a cluster of elements seems summarisable as a particularistic quality. There is a concreteness, vividness and detail. The nooks and crannies of a phenomenon, an event, an experience are explored.

Fourth, the case study can be individualised. Each person can clarify the similarities and the differences in his own setting, his own organisations, his own personality.

Fifth, the case studies accent process, change over time. This has a particular utility for 'men of action', persons who want to do something-administer, supervise, teach. Data are revealed on where and how one begins, implements, and terminates. The critical decisions at each point in time are highlighted, along with such elements as alternatives, prediction systems, subjective probabilities, value systems, utilities, costs and benefits. (Smith, 1974).

(d) Reliability:

Guilford defines reliability as "the accuracy with which a score represents the status of an individual in whatever aspect the test measures him" (Guilford, 1954). Reliability may be seen as "concerned with the degree of fit between construct and data. Given high reliability it should be routine for other researchers to reach the same representations from the same events, and further to gather their own data and be able to handle that in a manner that is free from ambiguity or confusion" (Walker, 1980). The critical point is therefore that

reliability is concerned with the relation between events
and representations. In the case studies, the emphasis is
towards 'collecting definitions of situations' (multiple
representations) and the presentation of the material in
forms where it is open to multiple representations. The
responsibility for the reliability is therefore passed to
some extent to the audience.

The term 'reliability' also pertains to the problems of
replicability that is, would another researcher entering the
same situation produce similar results? Walker suggests
that by emphasising procedures rather than personal situation,
case study research has "high reliability in the sense for
educational situatons are rarely replicable and the proposition
would be difficult to test. But the theory it would seem that
where procedures are clear and explicit, then reliability in
this sense would be higher than it would, given a free hand to
the researcher in the design and conduct of the case study".
(Walker, 1980).

(e) <u>Validity</u>:

Validity is about truth conditions and is described as
"the concern with what a test measures and with what it will
predict" (Guidford, 1954).

Case study belongs to the category where the researcher
enters the system to seek truth through the portrayal of
reality. Case study research therefore relies heavily on
face validity, that is the judgement that the results seem to

fit the reality.  Though 'face validity is distrusted' by
psycho-metricians (Guildord, 1954) face validity is of much
greater significance in the case study, for the case study
worker, as opposed to the psychometrician, "the internal
judgement made by ᵗᵉ time he studies, or who are close to the
situation, are often more significant than the judgements
of outsiders" (Walker, 1980).

## (f)  Procedure:

The case study worker often turns to the ethnographer
for selection of models of procedure, conduct and techniques.
The ethnographic model follows a set of social processes that
influence and shape it from its inception through the fieldwork
phase and into its final presentation, reception and usage.

In case study, the field work is the basis of getting
information of the subject.  Since it is time-consuing, Walker
suggests' condensed field work' to replace long immersion in
the field as the legitimate methodological basis for case
study in educational research rather than waiting for personal
relationships between researchers and subjects to create trust,
it is possible to substitute sets of rules and procedures
which synthesise an ethic that makes feasible a research
strategy that is genuinely 'democratic'. (Walker, 1980).

One of the implications of using condensed field work
methods is a much heavier reliance on the unstructured interview
than is usual in participant observation.  The interview is a

penetrating device requiring greater protection for those
studied.  Hence a questionnaire may precede the interview
and the interview may be used to supplement and elucidate
information provided in the questionnaire.  Since the case
study is a selective mirror of events, accounts and deflinition
of what happens, whenever selections are made, they must be
related as far as possible to name issues and negotiated with
participants as to relevance and accuracy.  By according
confidentiality to informants, respecting the privacy of the
interviewee and recognising that people own the facts of their
lives, the quality of information provided can be improved.

(g)  Limitations:

A few limitations of the case study have been reported.
First is the over confidence that the researcher develops in
his mind.  The researcher is "central in the case study and
thus his sense of complacency is an important barrier and is
highly detrimental to any scientific outlook" (Guruswami and
Rajarathnam 1976).  The second major drawback is the tendency
of over generalisation on the part of the researcher.  Thirdly,
the amount of time and cost involved in case study is rather
prohibitive.

Case study has, however, come to occupy a significant
place in social research.  Thomas and Znaniecki called the
case study as "the perfect type of sociological material"
(Thomas and Znaniecki, 1927).

## 4. RATIONALE FOR THE USE OF THE CASE STUDY METHOD IN THE PRESENT STUDY:

The essential objectives of the present study, among
those specified in para 2 above, are (1) To increase our
knowledge of the positive factors facilitating the
institutionalisation of innovations. (2) To identify factors
of resistance to change that may serve to block the imple-
mentation of innovations. (3) To ascertain factors that
lead to the discontinuance of innovations. (4) To examine
the consequences of the role performance of the change agents
and opinion leaders in the implementation of the innovations,
and (5) To identify the characteristics of the different
categories of innovators. It was also proposed to include
five additional specifications. (1) Datawould be obtained
from staff members of the schools involved in the effort to
implement a particular innovation that indicated their attitudes,
performance, and social relationships at different phases of
the implementation. (2) The study should be so designed that
it would be possible to examine the research issues in a natural,
rather than an artificial or contrived setting. (3) Procedures
should be used that would permit the investigation to ascertain
the performance and reactions of members to a proposed change
as unobtrusively as possible. (4) The field procedures used
should permit the development of rapport between the observer
and the observed. (5) The research strategy should make
provision for the use of a variety of techniques for obtaining
data. In addition to collection of data through questionnaire,
it was proposed to conduct formal and informal interviews, to

analyse public and private documents and to make cross-
references with different agencies of education. A variety
of techniques was required not only to gather different types
of relevant information, but also to obtain information to
check the relia bility of data.

These specifications results in the selection of the
case study method which is designed "to utilise to the full
the advantages of seeing the situation as a whole and of
attempting to grasp fundamental relationships from whcih
can come the insights which can furnish the hypotheses for
later, more detached, quantitative study". (Katz et al., 1953).

Havelock has expressed his disappointment "to find so
few case studies. Of the thousands of dissemination and
utilisation events that take place each year, it is unsettling
to find so few documented in such a way that others could
learn from them (Havelock, 1975).

The case study method was selected because (1) It
provided a strategic way to explore the complex organisational
problem proposed to be studied (2) It permitted to carry out
in depth observations of the several aspects of the dynamics
of an effort to institute planned change into an organisation.
(3) It also made provision for the use of a variety of data-
gathering methods, a desideratum for the enquiry and (4) It also
would help to fill a void in the number of case studies in the
field of innovation.

A study of the literature for criticism of case study
as a research method helped the present investigator to
have check systems to minimise subjectivity of the researcher
while interpreting the data collected.

The most serious criticism against the case study
approval is that it does not have the potentiality to
generalise due to limited size of the sample. By a careful
selection of representative cases, it would be possible to
generalise and develop theories, as the studies by the Centre
of Educational Research and Innovation (CERI, OECD, 1969-71)
have shown.

5. SELECTION OF INNOVATIONS FOR STUDY:

The present study is "An enquiry into certain aspects
of selected innovations in education" and one of the prime
tasks of the investigator was to select innovations for
detailed study.

S. Purushothaman (1979) has identified a list of 72
innovations practised in various schools in the schools of
Tamilnadu, as ascertained from heads and teachers of schools,
Inspecting Officers of the Department of Education and other
Jury members. The present investigation started with that
list of innovations as the basis for selection of innovations.

The investigator had the opportunity to conduct "Workshops
on Modern Management Practices in Education" at twelve different
district centres on behalf of the Tamil Nadu State Council of
Educational Research and Training. Each workshop of 3 days
duration was attended by about 50 heads of schools drawn from

different types of schools. The innovation list was issued
to the participants with instruction to identify the innovations
practised in their respective institutions. Two sessions in
each of the workshops were devoted wholly to the problems of
innovations with regard to the aspects of the adoption,
dissemination and resistance and, their responses to the
questionnaire issued were also discussed in a critical manner.

These workshops were followed by a sequential workshop
arranged by the Investigator at Coimbatore to which 30 heads
of schools were invited on the basis of their participation in
the earlier district workshops and recommendations by the
District Educational Officers. This workshop had as resource
persons a strong team of educational researchers led by
Dr. D.B. Desai, Centre of Advanced Study in Education, Baroda.
A proforma was issued to furnish particulars of innovation,
factors of assistance, factors of resistance, causes of
discontinuance and dissemination of innovations. Case analysis
of innovations were critically examined by the participants.
About 50 innovations were identified.

They were referred to a jury consisting of eminent
educationalists for selection of innovations for detailed
study. Ten innovations were selected. Particular attention
was given that different categories of Innovations as specified
hereunder were represented in the list of selected innovations.

| 1. | Source oriented: | NCERT / SCERT | : | 2 |
|----|------------------|---------------|---|---|
|    |                  | Department of Education | : | 5 |
|    |                  | School | : | 2 |
|    |                  | Teachers' Union | : | 1 |
|    |                  | Total | : | 10 |

| 2. | Nature of Innovations: | Organisational | : | 6 |
|----|------------------------|----------------|---|---|
|    |                        | Instructional | : | 1 |
|    |                        | Methodological | : | 3 |
|    |                        | Total | | 10 |

| 3. | Type of Innovation: | Maintenance | : | 3 |
|----|---------------------|-------------|---|---|
|    |                     | Renewal | : | 7 |
|    |                     | Total | | 10 |

| 4. | Stage of Innovation: | Institutionalised: | | 2 |
|----|----------------------|--------------------|---|---|
|    |                      | Discontinued | : | 2 |
|    |                      | Adoption | : | 4 |
|    |                      | Institutionalised in some and discontinued in others | | 2 |
|    |                      | Total | | 10 |

| 5. | Spread of Innovations: | Introduced in very few schools | : | 6 |
|----|------------------------|--------------------------------|---|---|
|    |                        | Most Schools | : | 4 |
|    |                        | Total | | 10 |

It may therefore be seen that the selection of innovations had taken care of the different aspects of innovations and were representative.

6. TOOLS OF STUDY:

(a) Questionnaire:

   i. Place of Questionnaire in Case Studies: "It is clear
that this (case study) approach is a costly one in time and
money. Each case becomes a research in itself, and the
collection of even 100 adequately documented cases may easily
consume 2 years of the student's time". (Geode and Hatt, 1952).
For a part-time research student, it would rather take longer
time and effort. The present study covered 10 innovations
practised in 140 schools. It was therefore almost 140 cases
that had to be studied and analysed. Collection of responses
through questionnaires has become an accepted method of
collection of data for case studies, provided that interviews
follow the return of questionnaires. For example, John Mays
et al have adopted the procedure in their case study of a
comprehensive school in a North West New town (Mays et al, 1968).

   S.Purushothaman (1979) had also effectively used
questionnaires in preparing case studies of innovative
institutions.

   ii. Construction of the Questionnaire: When the investigator
conducted the workshops for heads of schools, he issued an open
ended questionnaire seeking responses from the participants.
The groups were small and a critical analysis session followed
the return of questionnaires. The investigator was able to
identify the types of questions and the different responses
that might be expected to the different questions.

He set about constructing the questionnaire with due reference to the common rules of framing questions, like clarity, simplicity, preciseness, etc.,

The questionnaire had the following components:
(1) Personal Data form (P D)   (2) School Profile form (SP)
(3) Innovation Profile (I P).

The questionnaire contained 60 questions covering the following details.

| | | |
|---|---|---|
| 1. Exploring data of the Innovation | : | 7 Questions |
| 2. Awareness stage | : | 4 Questions |
| 3. Adoption stage | : | 8 Questions |
| 4. The Adopter continuum | : | 3 Questions |
| 5. Role of change agents and opinion leaders | : | 8 Questions |
| 6. Resistance | : | 10 Questions |
| 7. Dissemination | : | 8 Questions |
| 8. Discontinuance | : | 6 Questions |
| 9. Evaluation | : | 6 Questions |

The questionnaire was issued to 20 teachers in 4 different schools to be answered and returned. It was also given to a jury for their opinion. It was found that some of the terms were not clearly understood by the respondents. Such terms, phrases and sentences were reworded or expanded to remove any doubt or ambiguity. For example, Ambivalent was not understood by most and was changed as 'neutral'. The world 'Institutionalised caused some difficulty and the words' has become part and parcel of the school system' were added.

It was also found necessary that some of the terms are
to be defined in the questionnaire itself. For example
'Change Agent', 'Opinion Leader'. A small introductory
explantion had to be given before the questions relating
to the Adopter continum.

A few questions were also added so that further
information was available and there was smooth flow of
responses. The revised questionnaire had 81 questions in
the place of 60 in the original questionnaire.

The structured responses to the questions also underwent
thorough revision, modification, deletion, inclusion of
responses. Some of the responses were given in direct speech
form as to be understood clearly and be precise and short.

A few open ended questions were also added to provide
for supply of additional information. The format was revised,
dividing the questionnaire into 9 parts starting on a fresh
page. A marginal strip for entry of responses for easy data
processing was also added.

The personal data form and school profile were also
thoroughly revised so that more information was sought.

The salient features of the questionnaire were:

1. Exploring data : The name of the innovation and a short
account of the innovation, the objective,
teachers and students.

2. Awareness : Time, Source, pipeline of source, initial
reaction.

| | | |
|---|---|---|
| 3. | Adoption | Time, Reason for interest, information sought, reaction of colleagues, shaping of the ideas, present stage, picture of the school before and after. |
| 4. | The Adopter Continuum | The distribution of the adopter categories, their identifying characteristics, the shift from one category to another. |
| 5. | Role of change agents and opinion leaders | The persons, their number, their influence, their role, their characteristics, their mode of intervention. |
| 6. | Resistance | Resisters, their number, mode of resistance, reasons for resistance, factors of resistance, causes, removal of resistance, characteristics of resisters. |
| 7. | Dissemination | Persons, Mode of dissemination, interaction. |
| 8. | Discontinuance | Time, Factors for discontinuance, persons who decided, reaction of teachers. |
| 9. | Evaluation | The six characteristics: |

> Relative Advantage
> Compatability
> Complexity
> Divisibility
> Communicability
> Observability

The questionnaire is given in the Appendix.

(b) Interview Schedule:

As has been stated already, the interview is a very important phase of the case study. The personal interaction that takes place between the investigator and the interviewee facilitates a fair understanding of the situation. The interview schedule was prepared for the purpose of interviewing the heads

of schools and selected teachers who responded to the
questionnaire. The responses to the questionnaire were
analysed and the interview schedule was prepared to supplement
and elucidate the information given in the responses to the
questionnaire. It was also used to clear up areas of doubt
and uncertainty. Wherever any question in the questionnaire
was not responded to, the interview was used to collect
information in that regard.

The interview schedule was divided into seven ~~six~~ parts and
covered the following areas.

| | | |
|---|---|---|
| 1. | Description | : The salient features of the innovation, over all evaluation. |
| 2. | Awareness | : Exact year, Pipeline of sources. |
| 3. | Adoption | : The interest stage, access to further information, the acceptance of the idea, the modifications it underwent, The change brought about in the climate or the school, the adopter continuum, influence of change agent and opinion leader. |
| 4. | Resistance | : Causes of resistance, personal factors the history of resistors, How overcome. |
| 5. | Dissemination | : Who and how disseminated – why no further efforts were taken to for dissemination? Persons interested in the idea, interaction with other schools, colleges of education, etc. |
| 6. | Discontinuance | : Causes of discontinuance, personal factors, other factors. |
| 7. | Personal data | : Attitude to profession, attitude to school, relationship with colleagues, general professional knowledge. |

The interview guide was used to collect information from persons
who were not issued the questionnaires, the inspecting officers,

the project co-ordinatore, the parents and the students.

The interview guide was used to gather information about the following. (1) The role and impact of the institution. Its special features. Leadership role of the institution, its head and faculty. (2) Knowledge about the innovation (3) Reaction to the innovation - Evaluation of the innovation, changes brought about. (4) Resistance factors.

(c) School Profile:

It is essential that information about the school is gathered in a case study to identify factors favourable to or disrupting educational activities. It was also proposed to test certain hypotheses relating schools and innovations. The following data was gathered through the School Profile. (1) Age of the School (2) Nature of management (3) Locality - Accessibility to staff and students (4) Leadership continuity (5) Quality of faculty: Qualification, service, professional involvement. (6) Innovation (7) Campus Peace.

The school profile was issued to heads of schools and collected back.

(d) Personal Data:

Information about the persons responding to the questionnaire were collected through a personal data form. This was intended to understand the personality of the respondent, and test certain hypotheses relating to certain variables in the individuals and the adoption or otherwise of innovation.

The following information was sought. (1) Service
(2) Age   (3) Socio-economic-educational background of parents
(4) Educational background of respondent   (5) Professionalism
of the respondent.

7.   THE SAMPLE:

(a)  The size of the sample in Case Studies:

Case study research has been defined as 'research on
samples where N equals 1' (Walker, 1980).  The problem for
the case study worker is not whether it is worth studying
individual events, but whether he can do so in a way that
captures the attention of his audience.  When only one instance
is studied, it does not really matter which instance is
studied.  "The sampling problem is not really a problem at
all; one instance is likely to be as typical and as atypical
as another".  (Walker, 1980).  The problem of generalising
cases to become a problem for the researchers.  There have
been large number of case studies such as Gross et al (1971),
Bentzen (1974), Alderfer and Brown (1975), Mays et al (1968) etc.,
where the sample studied consisted of one and only one case.

The present study has as one of its objectives to describe
in certain terms not only the characteristics of innovations
but also the factors leading to adoption or rejection of
innovations.  The study has desired to find out why, while
an innovation gets institutionalised in one setting, the same
innovation is rejected in another setting.  Further it was also
preposed to test certain hypothesis.  It was therefore found

advisable to select a sample greater than 1.

(b) Type of sampling:

The sample chosen was a purposive sample. Purposive sampling is the device which selects a particular group or category from the population to constitute the sample because this category is considered to mirror the whole with reference to the characteristic in question. In this type of selection, the sample is restricted to units considered by someone to be specially typical of the population.

(c) Selection of the Samples:

The distribution of the schools where the selected innovations were practised ranged from 4 with regard to one innovation to all the schools in Tamil Nadu with regard to a few others. It was therefore considered that the number of schools might be selected depending on the spread of the innovation. Expert opinion was taken from Professôrs of Education and from Inspecting Officers of the Department of Education with regard to schools which were typical with regard to the innovation studied.

The sample consisted of the following:

| Sl. No. | Name of Innovation | Number of Schools taken up for study |
|---|---|---|
| 1. | Higher Secondary Education  .. | 20 |
| 2. | Modern Mathematics  .. | 20 |
| 3. | Objective based Evaluation  .. | 10 |
| 4. | Centres of Continuing Education  .. | 4 |
| 5. | College Complex  .. | 10 |
| 6. | Physical Education Evaluation  .. | 20 |
| 7. | Comprehensive Internal Assessment .. | 20 |
| 8. | Work experience  .. | 5 |
| 9. | Library Centered Teaching  .. | 20 |
| 10. | Staff Incentive Schemes  .. | 10 |
| | | 139 |

With regard to Innovation Nos.3, 8 and 10 the sample
consisted of all the schools where the particular innovations
were reported.  With regard to other innovations, it was seen
that schools were selected to represent differeent stratifications
like type of management, sex, locality, size, etc. adequately
as far as possible.  The schools were spread over 12 of the
16 districts of Tamilnadu.  The sample and its stratifications
are detailed in the ~~case-study-reports~~ appendix in the next chapter.

8.  COLLECTION OF DATA

(a) Questionnaire:

A set of 11 questionnaires was given to each head of the
institution constituting example in person by the investigator
in most cases or sent by post.  Each head of the institution
was asked to fill in the following forms (1) Personal Data
(2) School Profile  (3) Innovation Profile.

Each head of the Institution was also asked to issue the
Personal Data form and the Innovation Profile  Form to 9 teachers
in his school, selecting three from graduate teachers, three from
secondary grade trained teachers and three specialist teachers.
Certain modifications in the constitutents were made with
regard to innovations like Modern Mathematics which did not
concern a group of teachers.  The teachers were issued
(1) Personal Data  (2) Innovation Profile.  The investigator
had the opportunity of having travelled all over the state,
visited most of the schools and developed personal contacts

with a large number of teachers when he was holding high offices in the teachers' organisations. The investigator had no difficulty in getting back all the questionnaires duly filled in.

(b) Interviews:

The investigator visited the schools and interviewed three teachers from each of the schools, of whom two had responded to the questionnaire and one other teacher who was not issued the questionnaire. The investigator also met the other teachers, wherever necessary, to get clarifications on the responses made by them and filled in questions not answered.

Informal interviews were also arranged to meet the opinion leaders in the school, the parents and students, wherever necessary and warranged. In addition, the project co-ordinator, the inspecting officers and any other person involved in decision-making, implementation or evaluation of the innovations were also interviewed. Since the samples of persons interviewed varied from innovation to innovation, details are given in case study reports.

(c) Other sources:

With regard to certain innovations, departmental publications governmental orders, reports, syllabuses, reports of schools or other agencies like NCERT, SCERT had to be taken resourse to to supplement the data collected.

## 9. METHODS OF ANALYSIS OF DATA:

### (a) Recording Data:

Each innovation was given a two digit code ranging from 01 to 10. Each school reporting a particular innovation was given a two digit code ranging from 01 to 20.

The head teacher was given the code 10 and the teachers answering the questionnaire were given code numbers 01 to 09.

These code numbers were written at the top of the marginal strip on each page, before the strips were torn and sent for processing. For example,

<div align="center">

03

14

05

</div>

refers to the questionnaire returned by the teacher with the code number 5 from the 14th school reporting the third innovation.

This method, while giving ananymity to the respondent, helped the investigator to track down the person concerned easily for interview and other purposes.

### Quantitative Data:

The formats for all the forms, namely, the School Profile, the Personal Data, and the Innovation Profile had been so prepared as to leave a margin of 4 cm on the right margin on each page with the question numbers duly printed.

The respondents were asked to circle or tick their responses to the several alternatives given to each of the questions. The investigator transferred their responses to

the margin in a numerical code. For example, in the School
Profile, the first question is

1. Age of the School

   (a) under 5 years;    (b) 6-10 years   (c) 11-20 years;

   (d) 21-50 years       (e) Over 50 years

The numerical code, given was 1 for a, 2 for b, 3 for c, 4 for d
and 5 for e. If the age of the school was given as 11-20 years,
the entry in the margin was 3. For question No.8 relating to
facilities, 0 for inadequate and 1 for adequate were the codes.

Qualitative Data:

With regard to the replies to open ended questions, the
responses were read through and the salient points were
recorded taking into account aspects concerned. For example,
responses to question numbers 27 and 28 in the innovation
profile were recorded with respect to Leadership, Teacher
Morale and Student Morale.

(b) Scoring:

Responses to the items on the Innovation Profile by the
respondents from each school were totalled item-wise. Then
the totals for each items by all the schools were totalled
and percentages of responses to each item were worked out.

With regard to School Profile, the data were quantitative
and tabulated in the usual way, giving details of particulars
under each head.