

CHAPTER - IV
DESIGN OF THE STUDY

Introduction

The 'explosion of knowledge' in recent times and the emergence of a new discipline of knowledge - utilisation in various sectors of human activity could not but exert their impact on the educational system. The drastic changes in the composition of the student body and the teaching community of Indian colleges in the last four decades after Independence were making heavy demands on the systemic capabilities of the colleges to achieve their objectives. Confronted by these challenges of social relevance, academic quality and student development, the colleges were experiencing the need to change. The experiences of the 'early adopter' minority of innovators in the colleges deserved sympathetic, perceptive and critical study in a holistic manner. To look at those innovations in their social setting and in a developmental perspective was the basic concern of the present study.

1. Procedures Employed

In order to achieve the objectives of the study, the case study method was adjudged to be the suitable

means by virtue of the 'concreteness' it would impart to the characteristics being examined and the facility it would provide to the treatment of complex social processes.

2. Scheme of Study

Accordingly the following scheme of study was outlined:

- 1) Identification of innovative ideas and practices proposed for the renewal and relevance of collegiate education.
- 2) Selection of some significant and effectively institutionalised innovations in their actual college setting.
- 3) In-depth study of the selected innovations.
- 4) Preparation of case studies.
- 5) Analysis of Data.

3. Basic Assumptions

The following assumptions relating to innovation and change formed the basis of the study and guided the collection of data, its analysis and interpretation.

- 1) Innovations come to life and grow in colleges in an atmosphere of freedom, freedom to experiment, to succeed, or even to fail.

2) Innovations become effective in open, communicative and interactive college communities.

3) The clarity and focus of problem-sensing, problem-definition and retrieval of solutions enhance the effectiveness of innovations.

4) The compatibility of the institutional aims and the objectives of the innovation promotes the latter's success.

5) Academic excellence, social relevance and the integrated development of the students' personality are goals that inspire innovative initiatives in colleges.

6) Promotion of social justice and service to the poor and the marginalised, are dominant concerns for some educators.

7) Innovators are a minority and may not always be popular; decisions relating to innovation cannot be dependent on the support of the majority.

8) All innovations face some resistance.

9) Resistance can be handled by appropriate strategies for behavioural change.

10) When other strategies fail, leaders of innovations resort to the authority strategy.

11) Systematic planning with division of labour, time schedules and mechanisms of accountability and authority, helps the implementation process.

12) Sustained programmes of staff development acclimatise and prepare the faculty for accepting, and collaborating in, change efforts.

13) Formative evaluation of the innovation process and corrective action taken on the basis of feedback, nurture innovations.

14) Some of the wholesome or harmful consequences of innovations may be intangible and may become visible after a long time. Therefore hasty judgements of success and failure of innovative efforts may be refrained from.

15) Successful innovators disseminate their insights and example to other institutions and cooperate in the replication of innovations.

16) Funds are critical inputs in the innovation process; however, modest resources are sufficient to implement successful change efforts, provided staff motivation and competence attain high levels.

17) The Principal's leadership behaviour, educational philosophy and proneness to innovations affect staff attitudes and commitment towards educational change.

4. Case Study - Strengths and Limitations

Defined as the study of a single case or bounded system, case study is gaining status and acceptability in educational research. Naturalistic observation and interpretation of higher-order inter-relationships are its characteristics. Case Study is focussed on the context of individual instances, whereas other research methods aim at discovering general relationships.

Case study makes it possible to closely examine unique problems or situations of individuals and groups, which other methodologies do not permit readily. The main advantage of the case study is that it allows a thorough and detailed analysis of a research problem in such a way that the findings can be directly applied to the object of the enquiry. Case study data can provide a natural basis for generalisations since they are down-to-earth and more strong in reality. From case studies generalisations are possible either about

an instance or from an instance to a class. Case study has been found appropriate for the interpretive and subjective dimensions of educational phenomena, especially to unravel their subtlety and complexity. Case studies are also guideposts to action; their genesis is in the world action and they contribute to it. Their resources and insights can be directly interpreted and put to use for the development of individuals, organisations, activities or programmes. It is an instrument of observation and analysis, and not merely illustration. The case study approach allows concentrated focus on a single phenomenon, using a variety of data-gathering techniques, with the purpose of collecting comprehensive information about it. The case study research observes the characteristics of the unit, with a view to probing them deeply and analysing them intensively so as to establish generalisations about the wider population to which the unit belongs. The factors and forces that influence or affect the behaviour of individuals and groups are enquired into. Valid, adequate, and complete data maintaining the continuity and sequence of facts are the basis of a good case study.

The researcher has a wide array of data-gathering methods to collect data for the case study-personal observation, interviews, questionnaires, study of documents

such as letters, diaries and reports, scrutiny of newspapers, periodicals, and photographs, psychological or sociological tests and measurements. Personal observation, both participant and non-participant, is the major data-gathering device for case study and often it is supplemented by structured techniques.

5. The Tools of the Study

Four instruments were prepared for data collection during the present study.

1. Institutional Data Sheet (Appendix 1)
2. Checklist of Collegiate Innovations (Appendix 2)
3. Interview Schedule for Study of Selected Innovations (Appendix 3)
4. Questionnaire for Principals and Teachers (Appendix 4) .

The Checklist of Collegiate Innovations was used to collect information about the question, which innovations had been introduced in colleges and also which colleges had introduced particular innovations. Tool 1, 3 and 4 were used to make an in-depth examination of selected innovations and the adopter colleges. They were used to study 8 selected innovations. The Institutional

Data Sheet was got filled up by the Principal of the respective college. The Interview Schedule was used to interview the 'adopter group' which was responsible for the implementation of the new experiment in the college. The Questionnaire for Principals and teachers who were personally involved in the innovation process was administered during the investigator's visit to the colleges.

Institutional Data Sheet

This was basically a checklist framed to secure basic data about the adopter college. It had 17 items of enquiry, including the college's aims and objectives, brief history, location, total number of students and teachers, area of campus, examination results, distinctive features etc. The information secured by this tool helped in identifying the characteristics of the adopter college. Before finalisation the tool was tested by administering it to three Principals who suggested certain changes in the items and wording, which were duly effected.

Checklist of Collegiate Innovations

This checklist had the function of obtaining data on the general innovation scenario in colleges and was

to be filled up by the Principals of colleges. It sought to find out which innovations had been adopted in the colleges and the respective stages of their adoption. The checklist had six divisions:

- (i) Institutional Organisation and Administration (14 items)
- (ii) Academic Development (22 items)
- (iii) Student Services (16 items)
- (iv) Community Service (7 items)
- (v) Value education (5 items)
- (vi) Staff development (16 items)

In each division the innovations which had a chance of adoption in colleges were enumerated and the respondents were asked to write a number within the brackets on the right hand side. This number was to be chosen from six alternatives indicating the status of the innovation in the college.

The draft of the checklist was examined by a group of five college Principals and two educational administrators. On the basis of suggestions received from them, some of the items were reworded or revised and some new items added. It was tried out in three colleges as a pilot study before finalisation. The purpose of this checklist was to find out the major innovations that were in currency in colleges and to identify the colleges

which had adopted significant innovations.

Interview Schedule for the Study
of Selected Innovations

The investigator used interview as the main means of data collection. Interview is a method of data gathering through direct verbal interaction between individuals. Its purpose is to obtain research-relevant information and it is focussed on the content required by the research objectives.

The interview was chosen as the major method of data collection owing to its advantages, such as :

- Opportunity for personalisation.
- Opportunity for asking for clarifications and supplementary questions.
- Usefulness for case study research, as detailed information could be collected.
- Depth and concreteness of information collected.

The focussed interview method was adopted by the investigator, the special features of which were :

- (a) The persons interviewed were known to have had been involved in a particular situation.
- (b) The researcher had previously studied the situation.
- (c) On the basis of his analysis of the particular situation, the interviewer prepared an interview guide with the major areas of enquiry specified.

The actual interview was based on the subjective experiences of the person who had been exposed to the particular situation. The distinctive feature of the focussed interview was that the interviewer had made prior analysis of the situation in which the interviewees were involved. In the present study the particular situation in which the interviewees were involved was the adoption and implementation of the innovations in the colleges and before the interview the investigator had adequately analysed the history and features of the innovations. The tool used for the Interviews was the " Interview Schedule for the study of Innovations " . (Appendix 3) It was prepared by translating the research objectives into the questions that composed the main body of the schedule. Thereafter the question format and the response modes were decided and items constructed. The

schedule had fixed alternative items of the dichotomous type, open ended questions and a scale item.

An example for the fixed alternative item is given below:

Item V (c)

Did you consider various alternate solutions for the need/problem	Yes/No
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An example for the open-ended item:

Item XVIII

What were the factors which
helped in its successful
implementation?

The scale item was the following:

Item XXII

To what extent did the innovation
achieve its objectives :

Totally	()
To a great extent	()
To some extent	()
Very little	()
Not at all	()

(✓ mark to be put against the appropriate response)

The scale score was checked against the data elicited by the open-ended questions.

Another mode used in the Schedule was :

Fill-in response mode :

Example : What was the reaction of the staff to the proposal? .

- indifference ()
- initial resistance ()
- cautious reservation ()
- Half-hearted agreement()
- cooperation ()
- full support. ()

(The relevant response was to be marked by a ✓ mark)

The interview method has the disadvantage of invalidity due to bias which is a systematic or persistent tendency to make errors in the same direction by attributing more than the true value to a response. This problem was sought to be solved by minimising the amount of bias as much as possible by careful formulation of questions in such a way that the meaning was clear and by cross checking the answers given by one person with those of another.

During the interview the investigator coded the responses himself. Coding is the translation of question responses and respondent information to specific categories for the purpose of analysis. Some of the questions were precoded and hence each response could be immediately and directly converted into a score in an objective way.

With regard to content, the Interview Schedule had the

following pattern:

<u>Aspects of Innovation</u>	<u>Number of Questions</u>
1. Characteristics of Innovation	4
2. Adopters	1
3. Problem-Awareness	2
4. Alternate solution	1
5. Source of Awareness	1
6. Personnel	3
7. Decision to Adopt	3
8. Dealing with Resistance	2
9. Shaping	1
10. Change agency	2
11. Cost	2
12. Conceptual framework	1
13. Contents	1
14. Model of change	1
15. Strategies	1
16. Impact	4
17. Helping/constraining factors	2
18. Evaluation	3
19. Overall rating	1
20. Dissemination	2
21. Future Plans	1

Questionnaire for Principals and Teachers

This tool was administered to the Principals and teachers of the colleges in which the selected innovations were implemented. Items 1-4 related to the personal data of the respondent. Item 5 sought his/her views on the innovativeness of the system of higher education, the university, the college, the Department and of himself/herself.

Item 6 enquired about the respondent's participation in the college in 6 areas. Under item 7 he/she was asked to name three successful and 3 discontinued innovations in the college. Under item 8, twenty five factors which were facilitative of innovations were listed with the question, whether each of them helped innovations in his/her experience. Similarly under item 9, 25 factors were mentioned as factors constraining the innovation. The respondent was asked to confirm if each of them was a constraint on innovation in his experience. Item 10 listed statements about 14 innovative practices and sought the respondent's agreement or disagreement with them.

The questionnaire helped the investigator to obtain first hand knowledge about the views of college Principals and teachers about the factors that helped or hindered innovations and also their participation in the implementation process.

Items 1-8 were framed to elicit relevant information about the respondent and his views on innovations in general so as to enhance the effectiveness of the interview.

The items in the questionnaire were first discussed with a group of researchers in the Faculty of Education of the University where the investigator was conducting research. This discussion helped in verifying whether the responses fulfilled the objectives of the investigation. Certain new factors were added to items 8 and 9 of the questionnaire and the wording of some others was modified. Thereafter it was examined by the expert group of Principals and educational administrators and approved by them.

6. Sampling

The investigator selected a purposive sample. A purposive sample is one arbitrarily selected because there is good evidence that it is very representative of the total population. In purposive sampling a particular group or category from the population is selected by the investigator because that category is considered to mirror

the whole with reference to the characteristic in question. He purposely selects and also purposely leaves out some cases. The sample is restricted to units considered by the investigator to be especially typical of the population. Purposive sampling is useful when one wants the sample to consist of not very large numbers of cases. It is different from stratified sampling in the sense that in purposive sampling the units are chosen purposively, whereas in stratified sampling they are chosen randomly. In this method it is left to the investigator to decide what to include and what to exclude. This type of sampling is possible only when there is a specific objective. The investigator has to pick up only such a sample which is relevant to the study and leave out others so that the purpose of the study is not defeated.

The advantages of the purposive sample are the following:

- 1) The sampling is within the complete control of the investigator and as such he can include in his study only such cases which in his considered judgement will make the sample quite representative.
- 2) The investigator clearly knows the objective of his study. He picks up variables with these objectives in view. Unnecessary variable are dropped.

- 3) In purposive sampling, the purpose of the study can be fulfilled even with a small sample, which is picked up purposely and carefully from the universe. In the context of the purpose of the study, a small purposive sample can be ^avery good representative.

The possibility of biased selection of units is one danger of this method. The focus of the present study was on selected educational innovations. The adopter college was relevant to the study as the receptacle in which the process of innovation took place. The population of the study consisted of the innovative ideas, practices and programmes proposed by the various Commissions and Committees set up by the Government or educational agencies from time to time and other innovations which were developed by the principals and teachers of colleges. The investigator identified a total of 110 such innovations during the first stage of enquiry. For this purpose 'the Checklist of Collegiate Innovations' was used. Out of them a purposive sample of 8 major innovations was chosen for intensive study by applying the following criteria.

- (1) The innovation should have had one or more of

the following features:

- (a) Contribution to academic quality and standards.
 - (b) It helped the academic improvement of under-achievers.
 - (c) Potential for making higher education socially relevant.
 - (d) Role in the integrated development of the student's personality and inculcation of moral and social values.
 - (e) Utility in the renewal of the college organisation.
- (2) Effective implementation in an arts/science college, as estimated by the adopter, based on his/her evaluation.
- (3) It had been institutionalised and was continuing.

The investigator consulted a panel of eminent educationalists consisting of 3 College Principals, a Vice-Chancellor and an officer of the University Grants Commission in the choice of the innovations to be studied. On the basis of their advice as well as the investigator's judgement and applying the criteria mentioned above, the following innovations were selected for intensive study:

- 1) Preferential Admission to Students from the Lower Income Group.
- 2) Applied Science Programme.
- 3) Restructuring of the First Degree Course.
- 4) Communicative Teaching of English at the Tertiary Level.
- 5) Social Ethics Programme.
- 6) College Preparatory Course.
- 7) College Autonomy.

The next stage in sampling was the selection of colleges which had introduced the above mentioned innovations. The population of the study in this case was a national network of 205 colleges which had common ideals and objectives; similar managerial pattern; and a shared historical background. These colleges were located in various parts of India and had made some coordinated efforts to introduce innovations aimed at academic excellence, social relevance and the personality development of students. The Checklist of Collegiate Innovations was handed over to 84 Principals of this group who were attending a national conference in December 1981 and their responses helped to get information about colleges which had adopted various new practices. In the case of certain innovations more than one college had adopted them. Therefore the investigator consulted the expert committee on the choice of the adopter college for each innovation, based on the following criteria:

- i) The college should have had institutionalised the respective innovation. ii) It should be an arts/science college. iii) It should be willing to cooperate in the study by allowing access to its

documents, personnel, premises and should have no objection to its name being mentioned in the study, with all the related observations. Accordingly 8 colleges were selected as the sample for the adopter colleges.

In the third stage also a purposive sample of respondents and consultees was chosen for collecting data relating to the innovations and the adopter colleges. In each instance respondents were selected on the basis of the following criteria:

- 1) The Principal of the college
- 2) The adopter of the innovation
- 3) The faculty members who were actively involved in the planning, preparation and implementation of the innovation.

Since the purpose of the study was to find out the realistic facts about the life cycle of the innovation and the factors which affected it, the relevant information could be obtained only from those who were actually involved in its processes and not from others who were indifferent to, or ignorant of it. This was the reason why a judgement sample of respondent was chosen. The

actual selection of respondents was done in consultation with the Principal and the adopter of innovation if he/she was a different person. The number of respondents ranged from 8 in the case of innovation No. 3 to 21 in the case of innovation No. 8.

Besides these structured tools, the investigator also used the following methods of data collection:

- (i) Personal Observation of events and interactions on the campus.
- (ii) Examination and analysis of the contents of records, documents and publications of the college.

The investigator visited the 8 colleges and conducted the study for periods of time ranging from 7 to 15 days. After the visits any further clarification or additional information required was secured by correspondence. In some cases the investigator visited the campus again to study later developments especially in the case of innovation Nos. 1,4,5 and 8.

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7. Collection of Data

The investigator explored the reports of the various committees and commissions on education set up by the Government and educational agencies from time to time; current educational journals; periodical publications of the University Grants Commission; and college magazines, in search of information about the innovations introduced in college education. As a result the Checklist of Collegiate Innovations was prepared which helped in **getting** further information about new ideas and practices. The list of innovations identified is given in Appendix 5. The Checklist of Collegiate Innovations was to be responded to **by** the Principals of colleges. Accordingly copies of the Checklist **were** handed over personally to the 84 members of a group of college Principals who were attending a national conference of Principals held in Bangalore in December, 1981. They hailed from various States of India and many of the colleges represented by them were reputed for their innovativeness. The filled-in checklists were collected from them on the next day and out of 84 copies distributed 80 were recovered with the relevant entries.

The ~~other~~ other three tools were used during the investigator's visit to the 8 selected colleges. The Institutional Data Sheet was filled in by the Principal with the assistance

of his close associates and the college staff. The interview of purposively selected respondents was done in the colleges in the light of the Interview Schedule. The Questionnaire was given to the respondents a day before the interview so that the interviewer could have prior knowledge of the interviewee's background, involvement in the innovation process and outlook. The documents and publications were obtained from the adopter's office, Principal's office or the library and examined. Copies of relevant items were obtained for future reference. The interviewer devoted special attention to non-participant observation as a data-gathering technique on the campus during the working hours and before or after, so as to get informal feedback from students and staff.

With regard to general information about the history of each innovation, the library resources of the University Grants Commission and the Association of Indian Universities in New Delhi were made use of. Conversations were held with the officials of the University Grants Commission including its then Chairman, Secretary, Additional Secretary and Joint Secretary who were involved in the implementation of innovative programmes such as college autonomy.

B. Analysis of Data

The present study relied predominantly on qualitative research procedures and techniques that helped generate descriptive data. The visits to college campuses and sustained interaction with the adopters of innovations and non-participant observation of their functioning helped the investigator to see the objects of study as their practitioners saw them. The continual concern was to see the new experiments in their social setting holistically and not as mere isolated variables for establishing statistical relationships. Such a phenomenological approach was considered appropriate for studying the sensitive and complex factors involved in attempted changes in institutional structures, long-favoured teaching habits and materials and value priorities.

Accordingly the methods of data collection were characterised by social interaction, personal observation of men and matters, formal interviews and informal chats, field notes, open-ended questions and scrutiny of documents and publications. The data thus collected was largely descriptive rather than quantitative or numerical. In such a situation data analysis involved identifying themes, constructing propositional statements and detecting

inter-relationships or convergences that supported such propositions. This meant examining the data from different angles and perspectives; and devising typologies or classifications that supported the propositions. There was only limited scope, or relevances for quantified data analysis in such procedures. The attempt was to understand the innovations, the people and the processes holistically in their own settings. The samples were more 'relevant' rather than 'representative'.

In the present study the researcher collected data by employing the prepared instruments, by personal observation and through examination of documents. The collected data was analysed largely by qualitative techniques, which were supported by calculation of percentages, ranking and the rating of choices made by the respondents. The findings were based on the relationships, convergence or aggregation of characteristics observed in the classified tabular data. In some cases, for example in identifying the factors which were facilitative or inhibitive of the innovation process, the percentage of respondents who confirmed a particular factor either as facilitative or inhibitive was taken into consideration. The outcomes of the content analysis of documents and the insights drawn from personal observation were used to arrive at inferences in respect of the variables under study.

All through the study, the researcher had borne in mind the limitations of the case study, especially the element of subjectivity that could creep into data collection and interpretation. Therefore a conscious attempt was made to report the case objectively and precisely and to avoid "faculty perception, deliberate deception, unconscious biases, or the reporter's or subject's desire to present the right answers." (Van Dalen 1973). In order to ensure the validity of the data collected through interviews, the investigator compared and cross checked the interviewees' responses with other sources of data. The validation of the questionnaire and other instruments was done by examining whether the items were related to the topic under investigation. The judgement of experts and careful analysis of the subject of study helped in this process. With regard to reliability, the consistency and accuracy of responses were checked by the pretests conducted. Since the prepared instruments were used to study, not only a single case, but eight instances of innovations successively, the validity and reliability of the tools were confirmed progressively as the study advanced.

The juxtaposition of eight case studies prepared with a uniform scheme of contents, was meant to obviate the limitation of the case study lacking 'breadth'. The analysis of data relating to eight cases, it was assumed, would impart not only depth but also breadth to the study.