

### CHAPTER III

#### METHOD AND PROCEDURE

##### Introduction

The previous chapter was concerned with the review of related literature which helped in defining the present study and its methodology. The present chapter is devoted to the description of methods and procedures employed in conducting the study. The study employs descriptive survey method of research. Descriptive survey method is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident, or trends that are developing. Descriptive research involves events that have already taken place and are related to a present condition. It is concerned with the generalised statistics that result when data are extracted from a number of individual cases.

##### Statement of the Problem

Various Commissions and Committees such as the Indian Education Commission (1902), the Calcutta University Commission (1917-19), the University Education Commission (1948-49), the Committee on Evaluation of Standards of University Education (1965), the Education Commission (1964-66) etc., (discussed in chapter I) recommended the need for initiating programmes for bringing about qualitative improvement in teaching-learning and evaluation processes at the undergraduate and post-graduate levels. The teaching departments in the

universities have been established for improving the quality of post-graduate education and research<sup>work</sup>. The University Grants Commission initiated College Science Improvement Programme (COSIP) in 1970-71, and the College Humanities and Social Sciences Improvement Programme (COHSSIP) in 1974-75, for bringing about qualitative improvement in teaching - learning and evaluation processes in Science, Humanities and Social Sciences at the undergraduate level in the colleges. The COSIP and COHSSIP envisage a number of activities to be initiated at the undergraduate level such as introduction of new methods of instruction, development of instructional material, provision of practical orientation in discipline, organisation of guest lectures, arrangement for remedial teaching programme for academically weaker students, provision of special programmes for gifted students, development of question bank, introduction of internal assessment, introduction of job-oriented courses, publication of news bulletin etc. The initiation and experimentation of varied activities would ultimately lead the institutions to the revision, updating and modernisation of the syllabus at the undergraduate level. The programmes were supported by adequate financial assistance for initiating academic activities ; for enriching libraries with advanced books and journals; and for equipping laboratories with modern instruments and apparatus. The investigation therefore, aims at studying the present position of the activities initiated under COSIP and COHSSIP at the undergraduate level in the colleges. So, the problem of the study has been formulated as follows :

' A STUDY OF COSIP AND COHSSIP SPONSORED BY THE U.G.C.  
IN SELECTED COLLEGES OF INDIA '

Definition of Terms

The important terms used in the study are defined as follows :

(i) COSIP : The College Science Improvement Programme (COSIP) is a quality improvement programme which was initiated by the University Grants Commission during the 4th Five Year Plan (1970-71) for accelerating the development of the science capabilities of predominantly undergraduate institutions and to initiate a process of continuous self-renewal. In order to improve the undergraduate education in science subjects ( physical, earth, biological and mathematical sciences ) and to expand the opportunities for undergraduates to pursue useful scientific careers, the COSIP aims to have beneficial effects on teachers and students, subject-matter and methods of instruction, syllabi, curricula and individual courses, facilities, equipment, workshop, library and teaching material.

(ii) COHSSIP : The College Humanities and Social Sciences Improvement Programme/ is a quality improvement programme which was initiated by the University Grants Commission during the 5th Five Year Plan (1974-75) for strengthening and enriching the teaching-learning and evaluation processes in Humanities and Social Sciences at the undergraduate level in the colleges. COHSSIP provides opportunities to teachers for bringing about change and innovations within the framework of the existing curriculum. Enrichment of the curriculum and experimentations would ultimately

provide a framework of modernising and updating the syllabi in cooperation with the concerned academic and other bodies of the universities. It aims specifically, at initiation of seminars, tutorials, symposia, group discussions etc., development of instructional material, provision of practical orientation in discipline, arrangement for guest lectures, arrangement for remedial teaching programme for academically weaker students, provision of special programme for gifted students, development of question bank, introduction of internal assessment, introduction of job-oriented courses, publication of news bulletin etc. It lays much emphasis on equipping library with relevant advanced books and journal<sup>and</sup> on making best use of it.

(iii) Selected Colleges : The colleges which are selected by the University Grants Commission for participation in COSIP and COHSSIP out of 3,300 arts, commerce and science colleges after satisfying its criteria of selection are defined as the selected colleges. The number of colleges selected by the U.G.C. for participation in COSIP, COHSSIP, as well as in COSIP and COHSSIP together were 128, 84 and 42 respectively ( U.G.C. Mimeographed list of COSIP and COHSSIP colleges, 1978 ).

#### Objectives of the Study

The following are the objectives of the study :

1. (a) To study the objectives of COSIP and COHSSIP as accepted by the teachers.
- (b) To study the emphasis laid on the accepted objectives of COSIP and COHSSIP for their attainment by the teachers.

2. (A) To study the present position of COSIP and COHSSIP with regard to their specified aims and objectives :
    - (a) Instructional Process :
      - (i) Methods of instruction ;
      - (ii) instructional material ;
      - (iii) practical orientation in discipline ;
      - (iv) guest lectures ;
      - (v) remedial teaching programme for academically weaker students; and
      - (vi) special programmes for gifted students.
    - (b) Evaluation Procedure :
      - (i) question bank ; and
      - (ii) internal assessment.
    - (c) Syllabus :
      - (i) revision, modernisation and updating ; and
      - (ii) job-oriented courses.
    - (d) <sup>(iii) News bulletin</sup> News bulletin.
    - (e) Library facilities.
  - (B) To study the teachers' perception of effectiveness of activities organised under COSIP and COHSSIP as mentioned in 2 (A).
  - (C) To study the existing accommodation facilities for conducting teaching-learning process.
3. To study the students' reactions towards the effectiveness of activities organised under COSIP and COHSSIP.
  4. To study the problems faced by the principals in the implementation of COSIP and COHSSIP.
  5. To study the utilisation of funds granted to the institutions for the implementation of COSIP and COHSSIP.

6. To study the trend of students' achievement in Science, Humanities and Social Sciences at the undergraduate level after the introduction of COSIP and COHSSIP.

#### Delimitation of the Study

1. The study is delimited to COSIP and COHSSIP in selected colleges located in various parts of India.
2. The University Leadership Project ( U.L.P. ) in COSIP and COHSSIP has not been taken up for the study.
3. The study is confined to the students in final year in Science, Humanities and Social Sciences at the undergraduate level in the colleges.
4. The study takes into account the teachers who were teaching at the undergraduate level in the institutions prior to and after the introduction of the COSIP and COHSSIP.

#### Design and Procedure

The research design framed for conducting the study is presented hereunder :

1. Stages of conducting the study
2. Sample
3. Instrumentation
4. Data Collection
5. Analysis and interpretation of the data

1. Stages of Conducting the Study : The study has been conducted in three stages :

Stage I : The original proposals sent by the colleges to the University Grants Commission highlighting the various activities to be organised under COSIP and COHSSIP with the subsequent changes made therein and their annual progress reports about the programmes were collected through mailed letters. The percentage of colleges

who sent their original proposals and annual reports pertaining to COSIP and COHSSIP was 51.30 and 56.35 respectively. The collected material was scrutinized thoroughly for finding out the commonalities in activities organised under COSIP and COHSSIP.

Stage II : The investigator visited 7 COSIP and 5 COHSSIP Colleges for collecting the preliminary data pertaining to the organisation of various activities under the respective programmes ; to come in contact with the personnel involved in the programmes ( principals, teachers and students ) and for observing various activities in process.

Stage III : The final data were collected by the investigator in person through field survey technique by coming in contact with the personnel involved in COSIP and COHSSIP through questionnaire, substantiating the data by interviewing them based on the items in the questionnaire and observing various activities in process.

## 2. Sample :

Population : The population of the study comprised principals, teachers and students of the colleges where COSIP and COHSSIP were continuing. The total number of colleges selected by the University for participation in COSIP, COHSSIP, as well as in COSIP and COHSSIP together were 128, 84 and 42 respectively. From responses to mailed letters, it was confirmed that the University Grants Commission discontinued its financial assistance to 37 colleges for COSIP and they had also discontinued the

programme. The total number of colleges, where COSIP, COHSSIP, as well as COSIP and COHSSIP together continuing was 91, 84 and 42 respectively which constituted the population of the study.

Sample : A purposive sample of principals, teachers and students was drawn from the randomly selected colleges having COSIP, COHSSIP, as well as COSIP and COHSSIP together. The number of colleges selected for studying COSIP, COHSSIP, as well as COSIP and COHSSIP together was 9, 8 and 4 respectively. The sample of the study with respect to two programmes, i.e., COSIP and COHSSIP, became 13 and 12 respectively. The preliminary information pertaining to the colleges selected for studying COSIP and COHSSIP are presented in table 3.1 and 3.2 respectively.

The principals, teachers and students were selected from the colleges for studying COSIP and COHSSIP on the following criteria :

- (i) Principal's role was studied as an administrator and also as a teacher if he took classes at the undergraduate level and his subject fell under the concerned programme.
- (ii) Only those teachers were selected for the study who were taking classes at the undergraduate level prior to and after the introduction of the programme.
- (iii) Teachers from most of the disciplines were selected for the study in the concerned programme.
- (iv) The students in the final year in Science, Humanities and Social Sciences at the undergraduate level were randomly selected for the study.

The number of principals as administrators selected for the study was 21 ( from each college ).

The number of teachers ( considering principal as a teacher ) selected for studying COSIP and COHSSIP from the colleges was 146 and 127 respectively.

Table :3.1: Colleges selected for Studying COSIP

1	2	3	4	5	6	7
Name of the Colleges	Year of Establishment of Colleges	Types of Colleges	Affiliated to the University of	Year of Introduction of COSIP	Subjects included in the Programme	Students' Strength in Science Subjects at the Undergraduate Level
1. Ahmednagar College, Ahmednagar	1947	Co-educational	Poona	1970-71	Chemistry, Physics, Maths, Statistics, Zoology, Botany, Microbiology	Between 251 and 500
2. D.A.V. College, Jullunder	1918	Co-educational	Guru Nanak Dev. University, Amritsar	1970-71	Chemistry, Physics, Maths, Statistics, Zoology, Botany	Between 251 and 500
3. D.N. College, Meerut	1958	Co-educational	Meerut	1972-73	Chemistry, Physics, Maths, Statistics, Zoology, Botany	501 or more
4. Fergusson College, Poona	1885	Co-educational	Poona	1971-72	Chemistry, Physics, Maths, Statistics, Zoology, Botany, Geology	501 or more
5. Loyola College, Madras	1925	Boys	Madras	1971-72	Chemistry, Physics, Maths, Statistics, Zoology, Botany	501 or more
6. Madras Christian College, Tambaram	1914	Co-educational	Madras	1971-72	Chemistry, Physics, Maths, Statistics, Zoology, Botany, Geology	501 or more

(Continued...)

( Table 3.1 continued)

1	2	3	4	5	6	7
7. Maharaja Singh College, Saharanpur	1938	Co-education	Meerut	1975-76	Chemistry, Physics, Maths, Statistics, Zoology, Botany	501 or more
8. Maharaja College, Jaipur	1883	Boys	Jaipur	1975-76	Chemistry, Physics, Maths, Statistics, Zoology, Botany	501 or more
9. New Science College, Hyderabad	1956	Boys	Osmania Univ., Hyderabad	1971-72	Chemistry, Physics, Maths, Zoology, Botany, Geology	Between 251 and 500
10. Ramnarayan College, Bombay	1937	Co-educational	Bombay	1970-71	Chemistry, Physics, Maths, Statistics, Zoology, Botany	501 or more
11. Sophia College for Women, Bombay	1941	Girls	Bombay	1971-72	Chemistry, Physics, Maths, Zoology, Botany, Bio-Chemistry, Micro-biology	Between 251 and 500
12. Vivekananda College, Madras	1946	Boys	Madras	1971-72	Chemistry, Physics, Maths, Statistics, Zoology, Botany	Between 251 and 500
13. Women Christian College, Madras	1915	Girls	Madras	1976-77	Chemistry, Physics, Maths, Zoology, Botany, Home Science	Between 251 and 500

Home Science subject was not been taken up for the study

Table :3.2: Colleges Selected for Studying COHSSIP

1	2	3	4	5	6	7
Name of the Colleges	Year of Establishment of College	Type of College	Affiliated to the University of	Year of Introduction of COHSSIP	Subjects included in the Programme	Students' Strength in Humanities and Social Sciences at the Under-graduate level
1. Kanodia Mahila Mahavidyalaya, Jaipur	1965	Girls	Jaipur	1977-78	English, Hindi, History, Philosophy, Political Science, Psychology, Sociology	Between 351 and 700
2. Khalsa College, Amritsar	1892	Co-educational	Guru Nanak Dev University, Amritsar	1977-78	English, Hindi, Punjabi, Economics, History, Political Science, Commerce	Between 351 and 700
3. L.D. Arts College, Ahmedabad	1937	Co-educational	Gujarat Univ.	1977-78	English, Gujarati, Hindi, Sanskrit, Economics, Geography, History, Psychology, Sociology	701 or more
4. Loyola College, Madras	1925	Boys	Madras	1975-76	English, Hindi, Economics, History, Commerce	351 and 700
5. M.T.B. College, Surat	1918	Co-educational	South Gujarat University, Surat	1977-78	English, Gujarati, Hindi, Sanskrit, Economics, History, Psychology	701 or more
6. N.A. and T.V. Patel Arts College, Vallabh Vidyanagar	1959	Co-educational	S.P. University Vallabh Vidyanagar	1975-76	English, Gujarati, Hindi, Sanskrit, Economics, History, Philosophy, Political Science, Psychology	701 or more

(Continued...)

(Table 3.2 continued.... )

1	2	3	4	5	6	7
7. R.G. College, Meerut	1929	Girls	Meerut	1975-76	English, Hindi, Sanskrit, Drawing and Paintings, Economics, Geography, History, Home Science, Music, Political Science, Psychology, Sociology	701 or more
8. Ramnerian Ruia College, Bombay	1937	Co-educational	Bombay	1975-76	English, Gujarati, Hindi, Marathi, Sanskrit, French, Economics, History, Philosophy, Political Science.	701 or more
9. S.D. College, Ambala Cantt.	1916	Co-educational	Kurukeshtra	1977-78	English, Hindi, Sanskrit, Economics, History, Political Science	Between 351 and 700
10. Sophia College for Women, Bombay	1941	Girls	Bombay	1975-76	English, French, Hindi, Urdu, Economics, History, Philosophy, Political Science, Psychology	Between 351 and 700
11. Stella Maris College, Madras	1947	Girls	Madras	1977-78	English, Hindi, Fine Arts, Economics, History, Management, Philosophy, Public Relation, Sociology, Statistics	Between 351 and 700
12. Vivekananda College, Madras	1946	Boys	Madras	1975-76	English, Hindi, Tamil, Telugu, Sanskrit, Economics, History, Philosophy, Commerce, Political Science	Between 351 and 700

French, Urdu, Music, Drawing and Painting, and Home Science subjects have not been taken up for the study

Table :3.3: Sample of Teachers and Students for Studying COSIP and COHSSIP

COSIP		COHSSIP			
Name of the Colleges	Number of Teachers	Number of Students	Name of the Colleges	Number of Teachers	Number of Students
1. Ahmednagar College, Ahmednagar	13	20	1. Kanodia Mahila Mahavidyalaya, Jaipur	8	20
2. D.A.V. College, Jullunder	13	20	2. Khaṛsa College, Amritsar	9	20
3. D.N. College, Meerut	12	20	3. I.D. Arts College, Ahmedabad	9	20
4. Fergusson College, Poona	13	20	4. Loyola College, Madras	7	20
5. Loyola College, Madras	10	20	5. M.T.B. College, Surat	10	20
6. Madras Christian College, Tambaram	10	20	6. N.A. and T.V. Patel Arts College, Vallabh Vidyanagar	13	20
7. Maharaj Singh College, Saharanpur	11	20	7. R.G. College, Meerut	15	20
8. Maharaja College, Jaipur	11	20	8. Ramnarain Ruia College, Bombay	13	20
9. New Science College, Hyderabad	11	20	9. S.D. College, Ambala Cantt.	7	20
10. Ramnarain Ruia College, Bombay	10	20	10. Sophia College for Women, Bombay	15	20
11. Sophia College for Women, Bombay	11	20	11. Stella Maris College, Madras	10	20
12. Vivekananda College, Madras	11	20	12. Vivekananda College, Madras	11	20
13. Women Christian College, Madras	10	20	-	-	-
Total	146	260		127	240

The number of students in final year at the undergraduate level in Science, Humanities and Social Sciences selected for studying COSIP and COHSSIP was 260 and 240 respectively. The collegewise sample of teachers and students for COSIP and COHSSIP is presented in the table 3.3.

3. Instrumentation : The investigator developed four tools (a checklist and three questionnaires ) for collecting the data pertaining to the objectives of the study 1, 2, 3 and 4. The data pertaining to objectives 5 and 6 were collected from the college office records. The developed tools are :

- (i) Checklist for Specification of Objectives of COSIP and COHSSIP ( for Objective 1 ; Appendix A-1).
- (ii) Questionnaire for Realisation of Objectives of COSIP and COHSSIP for Objective 2 ; Appendix A - 2 )
- (iii) Questionnaire for Students' Reactions Towards the Effectiveness of Activities of COSIP and COHSSIP ( for Objective 3 ; Appendix A - 4).
- (iv) Questionnaire for studying the Problems faced by the Principals in the Implementation of COSIP and COHSSIP (For Objective 4 ; Appendix A - 3 ).

Development of Tools : For the development of tools, the investigator had gone through different types of tools specifically, checklists and questionnaires which had already been prepared by different researchers for their studies. The tools for the present study have been developed in the following steps :

1. Necessary literature pertaining to COSIP and COHSSIP were collected from the different colleges and from the office of the University Grants Commission. They were studied in detail so as to secure a thorough knowledge of the functioning of COSIP and COHSSIP.

The commonalities in activities under COSIP and COHSSIP were extracted based on the college reports and the guidelines supplied by the U.G.C.

2. A preliminary survey of 7 COSIP and 5 COHSSIP colleges was conducted by the investigator whose main objective was to observe the various activities under the respective programmes in the process. The principals, teachers and students, who were involved in COSIP and COHSSIP, were interviewed about the organisation of activities under the programmes which provided the idea for developing a checklist and questionnaires for conducting the study. At the time of interviews, an attempt was made to validate the information given by the interviewees against the guidelines supplied by the U.G.C. and the college records related to the programmes.

3. Initial Form of Tools : The initial forms of tools are discussed as follows :

1. The preliminary draft of a checklist was prepared to meet the demands of objective 1. It sought the information pertaining to the objectives of COSIP and COHSSIP as accepted by the teachers and the emphasis laid on the accepted objectives for their attainment by them. The checklist consisted of 28 items pertaining to the specified objectives of COSIP and COHSSIP.

(ii) The preliminary draft of a questionnaire for realisation of objectives of COSIP and COHSSIP was prepared to meet the demands of objective 2. The questionnaire was used to collect the data pertaining to the present position of activities of COSIP and COHSSIP; teachers' perception of effectiveness of activities organised under

the programmes; and the existing accommodation facilities for organising teaching-learning process. It consisted of a large number of items under each specific aspects of COSIP and COHSSIP. The major dimensions of the questionnaire were : methods of instruction, instructional material, library facilities, accommodation facilities, field trips, guest lectures, remedial teaching programme for academically weaker students, special programmes for gifted students, question bank, internal assessment, revision of syllabi, job-oriented courses, news bulletin and a set of miscellaneous items.

(iii) The preliminary draft of another questionnaire was prepared for studying the students' reactions towards the effectiveness of activities of COSIP and COHSSIP to meet the demands of objective 3. The questionnaire was divided into two sections. Section A was meant for all the students who had undergone through the activities of COSIP and COHSSIP. It consisted of 21 questions pertaining to the various aspects of the programmes such as methods of instruction, instructional material, library facilities, guest lectures, field trips, question bank, internal assessment, revision of syllabi, news bulletin, and job oriented courses. The section B was meant for the students who had been benefitted by language laboratory ; who offered the subjects in which laboratory activities were involved; who had attended the remedial teaching programmes; and who had been invited to participate in special programmes. This section consisted of 8 questions. Under each aspect of COSIP and COHSSIP a series of items have

been asked.

(iv) The preliminary draft of a third questionnaire was developed for studying the problems faced by the principals in implementing COSIP and COHSSIP in their institutions ( for Objective 4 ). It consisted of 26 items related to lack of teachers' competency and interest in organising varied activities under the programmes, lack of students' interest for participation in various activities, lack of proper utilisation of library facilities, lack of physical facilities, affiliating nature of universities, non-availability of funds at adequate time and a set of few miscellaneous items.

4. Experts' Opinion and Try Out of Tools : Before finalising the tools, they were discussed with the experts in the Department of Education of M.S. University of Baroda. The tools were also discussed with the principals and teachers of the colleges where COSIP and COHSSIP were continuing. Then, the tools were tried out at Ramnarain Ruia College, Bombay for COSIP and N.A. and T.V. Patel Arts College, Vallabh Vidyanagar for COHSSIP with principals, teachers and a small group of students for validating the items. The try out enabled the investigator to discover some deficiencies, ambiguities and inadequacies in the items. Thus, the final forms of tools were evolved.

5. Final Form of Tools : The various aspects of final form of tools are discussed as follows :

(i) Checklist for Specification of Objectives of COSIP and COHSSIP : A checklist, consisting of a list of 20 objectives pertaining

to COSIP and COHSSIP, was finalised. The main purpose of the checklist was to check which of the objectives of COSIP and COHSSIP were accepted by the teachers ( considering principals as teachers ) and to study the emphasis laid on the accepted objectives for their attainment by them. The teachers were asked to put a tick mark ( ✓ ) against each of the objectives which they have accepted and the emphasis laid on the accepted objectives for their attainment on a 5-point scale. The reliability and validity of the checklist was established on the basis of experts' opinion.

(ii) Questionnaire for Realisation of Objectives of COSIP and COHSSIP : The final form of the questionnaire was developed for studying the present position of the activities initiated under COSIP and COHSSIP by the teachers; their perception of effectiveness of the initiated activities ; and the existing accommodation facilities for organising teaching-learning process. A series of questions were asked under each aspect of COSIP and COHSSIP. Some questions were of 'Yes' or 'No' type ; if the response was 'Yes' then the teacher was directed to the next items; if the response was negative then he had to leave the items blank pertaining to that question. At many places the teachers were asked to check more than one item. The questions pertaining to teachers' perception of effectiveness of activities of COSIP and COHSSIP were placed at the end of each activities on a 5-point scale. The questionnaire was developed on following aspects of COSIP and COHSSIP.

- (i) Methods of instruction
- (ii) Library and audio-visual aids
- (iii) Accommodation facilities for teaching-learning process.
- (iv) Field trips

- (v) Guest lectures
- (vi) Remedial teaching programmes
- (vii) Special programmes for gifted students
- (viii) Evaluation procedure : question bank and internal assessment
- (ix) Revision of syllabus
- (x) Publication of news bulletin
- (xi) Job oriented courses
- (xii) A set of miscellaneous items

The reliability and validity of the questionnaire was established on the basis of experts' opinion.

(iii) Questionnaire for Students' Reactions Towards the Effectiveness of Activities of COSIP and COHSSIP : The final form of the questionnaire consisted of two sections A and B. Section A was meant for all the students who had undergone through COSIP and COHSSIP and Section B was meant for the students who attended special activities under the programmes. A series of questions were asked under each aspect of the programme. The students' responses pertaining to the effectiveness of activities of COSIP and COHSSIP were sought on a 5-point scale. The students were instructed to leave the items blank if some of the activities were not initiated by their institutions. The students were asked the same questions which were asked to the teachers for studying their perception of effectiveness of activities of COSIP and COHSSIP. Section A consisted of 14 questions pertaining to the following components of COSIP and COHSSIP :

- (i) Methods of instruction
- (ii) Instructional material
- (iii) Library facilities

- (iv) Field trips
- (v) Guest Lectures
- (vi) Question bank
- (vii) Internal assessment
- (viii) Revision of syllabus
- (ix) News bulletin and
- (x) Job oriented courses

Section B of the questionnaire consisted of 4 questions which sought information related to particular activities organised for special groups of students.

- (i) Language laboratory for the students who have offered English language as a subject of study.
- (ii) Laboratory activities for the students who have offered subjects in which laboratory activities are involved.
- (iii) Remedial teaching programme for academically weaker students
- (iv) Special programmes for gifted students.

The reliability and validity of the questionnaire were established on the basis of experts' opinion.

(iv) Questionnaire for Studying the Problems faced by Principals in the Implementation of COSIP and COHSSIP : The final form of the questionnaire consisted of 16 items. Principal's agreement or disagreement with the items as problems was obtained on a 5 - point scale. The items in the questionnaire are related to the following areas of problems.

- (i) Lack of teachers' competency and interest in organising varied activities under COSIP and COHSSIP - items 1, 2, 3, 4, 5 and 16.

- (ii) Lack of students' motivation and interest for participation in varied activities of COSIP and COHSSIP - items 9, 10 and 11.
- (iii) Lack of proper utilisation of library facilities - items 7 and 8.
- (iv) Affiliating nature of universities - item 12 only.
- (v) Non-availability of funds at adequate time - item 13 only.
- (vi) Lack of physical facilities - item 15 only.
- (vii) Miscellaneous items - items 14 and 16.

The reliability and validity of the questionnaire were established on the basis of experts' opinion.

#### 4. Data Collection :

(i) Through Checklist and Questionnaires : In any type of research, the investigator has to collect the data keeping in view the objectives of the study. The data pertaining to the objectives of the study 1, 2, 3 and 4 were collected with the aid of developed tools ( discussed earlier ). The tools were administered on the sample by the investigator personally visiting the colleges selected for COSIP and COHSSIP. The respondents filled in the questionnaires and were interviewed based on the items of the questionnaires for substantiating the information, the responses were noted by the investigator. The investigator observed activities organised under COSIP and COHSSIP in process and collected relevant information for substantiating the information collected through questionnaires and interviews.

(ii) From College Office Records : For collecting the data pertaining to objectives 5 and 6 of the study the following college

college office records were consulted :

- (a) Annual reports of the colleges pertaining to utilisation of funds for the implementation of COSIP and COHSSIP (for Objective 5).
- (b) Annual university examination results of the students in final year at the undergraduate level in Science, Humanities and Social Sciences after the introduction of COSIP and COHSSIP ( for Objective 6 ).

5. Analysis and Interpretation of the Data : Keeping in view the objectives of the study, the data were classified, analysed and tabulated. Measures were taken to present the data through qualitative and quantitative analysis. For studying the objectives 1, 2, 3, 5 and 6 the data were sorted out programmewise i.e. (i) COSIP and (ii) COHSSIP. For studying objective 4, the data were analysed in three categories i.e. the colleges having : (i) COSIP, (ii) COHSSIP and (iii) both COSIP and COHSSIP together. The statistical techniques used for processing the data toolwise are discussed below :

1. Checklist : The responses obtained through the checklist were analysed in two ways.

(i) The frequencies of teachers' responses against each item showing the acceptance of objectives of COSIP and COHSSIP were converted into percentages and then the qualitative analysis was done.

(ii) The degree of emphasis laid on each accepted objectives of COSIP and COHSSIP for their attainment was studied on a 5-point scale. The summated score against each of the objectives was

obtained from the teachers' responses. Ranks were assigned to the objectives for studying the priority given to them for their attainment by the teachers. The highest score was assigned Rank 1 ; the next highest score Rank 2 ; the next highest score Rank 3 ; and so on. If the two or more objectives have the same score than the mean of progressive ranks for those objectives is computed and the same rank (mean) is assigned to all those such objectives.

## 2. Questionnaire for Realisation of Objectives of COSIP

and COHSSIP : The questionnaire has been analysed question-wise.

Three types of questions were asked in the questionnaire for studying the present position of activities under COSIP and COHSSIP and the measures taken by the teachers for the realisation of the objectives of the programme. The responses were analysed in the following ways :

(i) The questions which sought the alternative responses i.e. 'Yes' or 'No' were analysed in terms of percentages out of the total number of teachers of COSIP and COHSSIP separately.

(ii) At many places the respondents were asked to check more than one item in a question ; the percentage against each item is calculated out of the total number of teachers of COSIP and COHSSIP in the respective groups. In such cases the responses have figured out to be more than 100 percent because the respondents may have responded to more than one choice.

(iii) Teachers' perception of effectiveness of activities of COSIP and COHSSIP was found on a 5-point scale. The weightages were given to the points on the scale. The itemwise and overall effectiveness of each activity were measured in terms of mean scores. The levels of effectiveness of each activity of COSIP and COHSSIP were computed by considering the exact limits of the weightage on the scale as below :

5	-	4.45	to	5	-	To a great extent
4	-	3.45	to	4.44	-	To much extent
3	-	2.45	to	3.44	-	To some extent
2	-	1.45	to	2.44	-	To a little extent
1	-	1	to	1.44	-	Not at all

### 3. Questionnaire for Students' Reactions Towards the

Effectiveness of Activities of COSIP and COHSSIP : The students' reactions towards the effectiveness of activities of COSIP and COHSSIP were obtained on a 5-point scale. The weightage were given to the points on the scale. The levels of itemwise and overall effectiveness of activities were computed in terms of mean scores by considering the exact limits of the categories on the scale as shown below.

5	-	4.45	to	5	-	To a great extent
4	-	3.45	to	4.44	-	To much extent
3	-	2.45	to	3.44	-	To some extent
2	-	1.45	to	2.44	-	To a little extent
1	-	1	to	1.44	-	Not at all

4. Questionnaire for Studying the Problems faced by the Principals in Implementing COSIP and COHSSIP : The questionnaire was analysed itemwise. The levels of agreement or disagreement with the

items as problems were studied on a 5-point scale. The weightages were given on the points to the scale. The summated scores against each item from the principals' responses belonging to the respective programmes were obtained. Ranks were assigned in the respective programme indicating the intensity of problems. The coefficient of correlation (  $\rho$  ) was found out between problems faced by the principals belonging to two programmes.

5. Utilisation of Funds Granted for the Implementation of COSIP and COHSSIP. The percentage analysis technique was used for studying the itemwise utilisation of funds for the implementation of COSIP and COHSSIP.

6. Students' Achievement in Science, Humanities and Social Sciences at the Undergraduate Level after the Introduction of COSIP and COHSSIP : Graphs were plotted of the marks obtained by the final year students in Science, Humanities and Social Sciences at the undergraduate level after the introduction of COSIP and COHSSIP.

On the basis of analysis and interpretation, conclusions have been drawn in a manner so that an integrated picture of the study may emerge.

---