CHAPTER III

METHODS AND PROCEDURE:

The plan of study was made after consulting a number of Principals, senior and junior Professors, Deans of student welfare (universities), student leaders, and other educationists of various Universities in South India. Apart from the discussion with Teachers, Students and Administrators, parents also were contacted. After discussions, it was decided to include two functions of University Education, namely the teaching function and Student Development Services in the study. Then the objectives of the study were finalised.

In order to evaluate the methods of communication in higher education and student activities, it was decided to ascertain the views and observations of Teachers and Students on this matter. It was felt that it is essential to analyse the root causes and forces responsible before suggesting any improvements on the two functions covered in the study.

THE SEARCH FOR A METHOD:

A review of the related studies indicated that no serious attempt had been made in India to investigate the
attitudes of University Teachers and students towards the existing teaching methods and to ascertain their perceptions and views on student unrest and student development services. Some studies were conducted on University teaching methods in other countries. This investigator completed a piece of research work at the University of Birmingham, England in 1964, on attitudes towards University teaching methods; and the methods used in that study formed the basis for the present survey. It was decided to collect data for the present investigation through interviews, questionnaires and discussions on the assumption that the general views towards an issue can be obtained by intimating the individuals either through interviews or by questionnaire.

THE QUESTIONNAIRE:

The questionnaire was designed to cover all areas under investigation. It was framed with 'structured questions'; open-ended questions were included only to collect general information. The objectives of the study were mentioned in the preface on the first page. The questionnaire consists of three parts. Part one included four general questions on teaching methods and an inventory of attitudes. The attitude scale was orginally prepared by the present investigator at the University of Birmingham.
It was intended to survey three teaching methods lecture, seminar, tutorial, and a combination of these methods. Definitions of these methods were given to clarify the terms as they were used in the investigation. The original questionnaire consisted of one hundred statements selected from various sources. The selection of each item was made on the assumption that the item is functionally related to the attitude desired to measure. It was rather difficult to make the statements simple and clearly worded. Though every effort was made to minimize errors, it was not possible to eliminate them completely. This could be explained by the hypothesis that meanings are built up by the individual through experience, and since no two individuals have the same experience, it follows necessarily that in strictest logic, no verbal symbol, no word, can have exactly the same meaning for any two or more individuals. (Remmers) However, as far as possible, items too vague, to permit precise answers, obscure in meaning, and other ambiguous statements were eliminated.

The scale was presented to five judges for critical evaluation and for judgments of statements. The judges included professors and principals who were familiar with questionnaire construction techniques. They were requested to judge the statements by indicating the degree to which
a statement seemed to express a positive (favourable) negative (unfavourable) or neutral attitude towards the teaching method concerned and to ignore their agreement or disagreement with the proposition. The statements indicated by them as ambiguous were also eliminated from the scale. Those statements which all the five judges agreed as positive or negative were included in the scale. The assumption was that items thus selected would discriminate between positive and negative (favourable and unfavourable) attitudes because those who favoured a particular method would agree with the positive statements and disagree with the negative ones; whereas those who opposed would answer the opposite way. The neutral statements were not included in the scale as they were not discriminative. A four point rating scale—strongly agree, agree, disagree, strongly disagree—was provided in the inventory to indicate the strength of the opinion. The respondents were asked to give one response to each statement.

The second part of the questionnaire consisted of two sub divisions related to student problems. The first division included questions to elicit factual information regarding the nature and intensity of agitations and the ways in which such agitations are controlled in their institutions. Twelve items were included and they had to say whether it happened 'very often', 'some times' or
'never' in each case. The respondents were asked to tick in one column according to their views regarding the situation in their institutions.

In the second division twenty causes, and twenty remedies for student unrest were included. Three columns - 'very important', 'important' and 'unimportant' were provided. The respondents were requested to consider each cause/remedy and to indicate their opinion on the importance of each by ticking in the appropriate column. The statements (causes and remedies) given in the questionnaire were constructed from readings of related literature, discussion with teachers, students, Administrators and parents and was sorted out and grouped, on the basis of investigator's experience. Every effort was made to eliminate ambiguity in sentence construction, and to give one meaning to each item, use only simple and familiar words to avoid difficulties to understand each item.

The third part of the questionnaire consisted of some general questions and a table showing a pattern of student Development Services. The table was included to collect the views of students and teachers regarding the suitability of introducing the suggested pattern in their colleges. Eight questions were included to study the views and perceptions of teachers and students regarding the
practical difficulties in introducing the student development programmes, necessity to co-ordinate the activities, the expected objectives of the programme, functions of a well organised guidance programme, measures necessary to organise activities effectively, nature and functions of existing student Government and measures to be taken to improve discipline among students.

RELIABILITY AND VALIDITY.

PRELIMINARY TEST:

A preliminary test was conducted with twelve post graduate students and ten teachers (Seniors and Juniors) to test the questionnaire—whether it was clearly worded and understandable. The teachers included were familiar with questionnaire construction techniques and three of them English language teachers. Special requests were made to point out the difficulties in answering the questionnaire; whether instructions were clear and adequate or not; questions wording not clear, ambiguous, irrelevant, or repetitive, any difficulty in selecting the alternatives provided, space provided sufficient or not, time factor or any other defects. The main difficulties reported were regarding the instructions given, and the statements not pertaining to the Indian conditions and the length of the
questionnaire. Modifications were made, wording of statements changed and clear instructions were introduced at the beginning of each part of the questionnaire. Two teaching staff members of post graduate English Department of a College read through the questionnaire again to check the use of the English language.

The questionnaire designed and used by the investigator at the University of Birmingham has been revised at the Institute of Education, Cambridge University, England and was used for other investigations. The nature of revision is stated in Cambridge Monographs on Teaching Methods 1968:

Opportunities to measure the attitudes of Student groups to the lecture method, to tutorials and seminars arose from time to time in the course of assessing their attitudes to wider educational and social issues. For the former purpose, a questionnaire devised by C.J. John was used. In the original draft many statements were ambiguous and repetitive, defects inevitable in a pioneer study.

Having collected some pilot data, an item analysis suggested that forty statements could be chosen as unambiguous, and non-repetitive. Ten statements expressed views on each of the four methods. They gave adequate breadth for sampling opinions and provided a balance of favourable and unfavourable opinions in each area of method. The questions were organised into four sections to be scored independently. The fourth section "mixed methods" was retained as a 'throw away', the statements being so worded that it was virtually impossible to disagree with them.
One of the main samples tested was a group of advanced diploma students attending the Cambridge Institute of Education in the Sessions 1964-65 and 1965-66. (The total sample consists of 168 numbers.) Analysis of 1964 and 1965 groups revealed that they did not differ significantly from each other in average scores. Some of the course groups in each session has virtually the same averages. (Cambridge Monographs on Teaching Methods: JOHN MCLEISH, Cambridge Institute of Education, 1968 PP.18-19)

The same author revised the same questionnaire and administered to every student completing the three year course in ten colleges of Education (Cambridge Institute of Education) in the final term of 1968 (Ns1238). In this revision ten statements regarding the "mixed method" was ommitted and thirty statements, ten each about lecture, tutorial and Seminar were grouped in three sections. The attempt was made through preliminary Studies to ensure an equality of emphasis and balance between the three sections.

Regarding this revision it is stated:

Factor analysis and analysis of variance were used to discover inter-relationships between questionnaire items and between the various qualities of students and their scores on the questionnaire. The thirty items of the questionnaire were inter correlated for the total sample of 1,931 respondents. Seven factors were extracted which accounts for just over 50% of the test variance. The factors were routinely subjected to various rotations - Equimax, Varimax, Quartimax. But the effect of these rotations was simply to obscure the meaning of the analysis. The seven orthogonal factors readily lend themselves to interpretation, the patterns of positive and
negative signs accurately reflecting the basic structure of the questionnaire. The first factor is a general factor (only one question has a small negative loading). This factor accounts for just under 10 percent of total variance. Clearly it is a dimension which reflects the students general attitude to the three teaching methods as being generally acceptable or generally unacceptable ...

.... The second factor with which just over one-sixth of the variance is associated contrasts all the lecture statements with those which refer to the tutorial and seminar ....... The third factor, in an exactly similar way contrasts the tutorial with the lecture and seminar. This factor is associated with about seven percent of the total variance ........ The fourth factor which removes another four percent of the total variance contradpesses statements favourable both to teaching methods as such as to the tutor - lecturer, against those which are unfavourable to the student (who is regarded as the source of the break down in the teaching-learning situation). ................

The remaining three factors which take out a total of 13 percent of the total test variance, are of little psychological interest. They are related to the technical and semantic aspects of the questionnaire. For instance the fifth factor distinguished between questionnaire statements worded in a positive favourable sense and those with negative feeling tone. The sixth and seventh factors are concerned with the nature of the arguments used. The sixth factor relates to the question whether these criticisms of individual teachers, who are in effective partitioners of the particular method or whether it is the method as such is unbearable.


The same author used the questionnaire again in another study and the results are reported in 'Students Attitudes and College Environments' John Mcleish, Cambridge Institute of Education, 1970.
The investigators questionnaire on teaching methods revised at the Cambridge Institute of Education, University of Cambridge was used in the present study after making certain modifications to suit Indian conditions on the basis of the preliminary test. This consisted of thirty statements - ten each about the lecture, tutorial and seminar. Half are favourable and half are unfavourable. The respondents were invited to strongly agree, agree, disagree and strongly disagree. No separate statistical measures were taken to test the reliability of other parts of the questionnaire on the assumption that in a survey of opinion wherein, no implication for further behaviour of the respondents is considered, validity might be equated with reliability.

The questionnaire was finalised after presenting it to the Professor guiding the work and after making the improvements suggested by him. It was printed to get the necessary copies.

**General Population and Selection of Sample:**

General population included students and teachers of Post-Graduate Colleges affiliated to Madurai University. At the starting stage it was planned to include all students of degree classes and teachers in the study. Later considering the difficulties in collecting and analysing data from different
groups, and other practical difficulties, it was decided to select only Post-Graduate students and teachers of a few Colleges in one University area. This decision is justified on the assumption that Post-Graduate students would be more mature and would be able to give concrete views on the problems under investigation based on their experiences in undergraduate classes. Madurai University area was chosen as the investigator was working in this area; it was easy to contact the Colleges to administer the questionnaire and to conduct interviews.

Twenty three Post-Graduate Colleges affiliated to Madurai University were chosen for the study.

Selection of Sample: Random sampling was used to select teachers and students of science, arts and commerce faculties. The sample was limited to a small number considering the difficulties in administering the questionnaire and in analysing the data. Teachers and students were selected in random from the department registers. No other criterion was set to limit the sample and every effort was made to select a truly representative sample of the population under investigation.

Interviews: A tour plan was arranged to visit all Post-Graduate Colleges in the Madurai University area to
administer the questionnaire and to interview students and teachers. A letter permitting the investigator to administer the questionnaire to collect the required data from the University area was obtained from the Registrar of Madurai University. In the interview, the topics discussed were the various teaching methods, nature of existing student development activities and student problems in the particular institution. In the course of interview, improvements in the existing teaching methods, causes and remedies of student unrest, feasibility of student participation in administration, suggestions to organise student activities more effectively to channel student energies in the proper direction, powers and functions of student government, measures to improve discipline among students, and the need for guidance and counselling were all brought out.

The interview was arranged in such a way as to discover precisely the views of respondents and deliberately avoided any expression of disagreement or discouragement. The procedure adopted was to discover the views and remarks which could be used in the interpretation of data. Most of the student respondents gladly co-operated in the discussions and some of them showed real interest in the study. Teachers, particularly the younger ones co-operated whole-heartedly and the responses from some of the senior teachers were very encouraging. It was not possible to meet...
many Principals as they were very busy or pretended to be busy. Only one Principal of a Women's College refused to discuss and denied the investigator permission to administer the questionnaire to the Staff members. However as suggested by the Principal, questionnaires were posted directly to the Staff members. In general, many Principals showed keen interest in the study and willingly furnished the required information.

**Administration of the Questionnaire:** The investigator visited most of the Post-Graduate Colleges and administered the printed copies of the questionnaire. In some places, some Principals, Teachers and Students helped in distributing and collecting the questionnaire back. Some questionnaires were send by post enclosing self addressed stamped envelope and the letter from the University permitting to collect data. The returns by post was very poor. Three hundred questionnaire were administered and one hundred and eighty were returned. The incomplete questionnaires were not included in the analysis.

**Characteristics of the Sample:** The following table shows the number and characteristics of the sample included in the analysis.
### Table 1: Teachers' Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers (Men)</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>&quot; (Women)</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Teachers Arts</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>&quot; Science</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>&quot; Commerce</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Teachers with Ph. D.</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Teachers: Below 25 Years of age</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>&quot; : Between 25 - 40 Years of age</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>&quot; : Above 40 Years of age</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Teachers: Below 5 Years of teaching experience</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>&quot; : Between 5 - 12</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>&quot; : Above 12</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

**Total: 73.**

All teachers were working in post graduate Departments. There were only two colleges offering post graduate courses in Commerce in Madurai University. Therefore the number of commerce teachers included in the sample was very
There were seventy one students among the sample. The table given below gives the details:

### TABLE 2. STUDENTS.

<table>
<thead>
<tr>
<th>Students</th>
<th>Numbers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (Men)</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>&quot; (Women)</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Students Arts</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>&quot; Science</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>&quot; Commerce</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Students from English Medium</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Schools and Colleges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students from Tamil Medium</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Schools and English Medium Colleges</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 71.

All the students were attending full time post graduate courses in the respective Colleges. The grouping
of teachers and students given in the tables was made on the basis of the information given in the questionnaire by the respondents.

SCORING PROCEDURE:

All questionnaires filled by the teachers and students were given serial numbers. In part one, question number three was omitted from the analysis as the answers were not complete. Response to question numbers one and two was tabulated and percentage of the numbers favouring each method and duration of the same was calculated. In question number four, one score was awarded to the positive and zero to the negative answers.

The attitude scale on teaching methods was scored in the following way; three points were awarded for strongly agreeing, two points for agreeing, one point for disagreeing and zero for expressing strong disagreement (3,2,1,0) with a favourable statement. The reactions to unfavourable statements were treated in the same way, but the scoring was reversed (0,1,2,3). These scores were summed for each respondent for each of the sections of the attitude scale. This enabled the author to make comparisons between attitudes to the lecture, tutorial and seminar method respectively. The maximum score in each section is
thirty. This score signifies the most favourable attitude possible to the particular teaching method. The midpoint of the scale is fifteen; this indicates a neutral attitude. It is the cut-off point which separates favourable from unfavourable attitudes. The score zero represented the most unfavourable attitude possible. Arithmetic mean and standard deviation were calculated for each group of the sample and t-test was used to find out the significance of differences in scores between different groups to each method. This procedure enabled to measure on roughly equivalent scale the attitudes of individual students and teachers and groups towards each of the three methods.

For part two, a different scoring scheme was used. In part two A, two scores were given to 'very often' and one to "sometimes" and zero to "Never". Similarly in Part II Section B, two scores were given to "very important", one to "important" and zero to "unimportant". In part three, all the affirmative answers were given one score, and negative answers were given zero. In part two and three, percentage of the sample that responded to each question was calculated. In part two B, the assumption was that if 2/3 or more of the respondents considered a cause/ remedy very important, important, unimportant, this suggested a high possibility that the cause remedy was
important/unimportant objectively of the population under consideration. If the majority was less than 2/3 or 50 - 50 split, then the possibility was that the respondents were reacting to the statements on a random basis. The total score was intended to yield a valid and reliable measure of the respondents view regarding the importance of the cause/remedy. An average of respondents group score should measure the view of the given group to a particular cause/remedy under consideration.

Similarly in part three, the assumption was that if 2/3 or more of the respondents gave an affirmative answer to a particular question, this suggested a high possibility that the answer given to a particular question is the objective view of the population. If the majority is less than 2/3 or 50 - 50 split, then the possibility was that the respondents were answering the questions on a random basis. The total score was intended to yield a valid and reliable measure of the respondents view regarding the question under consideration.

LIMITATIONS OF METHODS AND PROCEDURE:

1. The sample was limited to a small number.

2. The data was collected by administering the questionnaire and conducting the interviews.
3. The questions used in the interview were not structured and no attempt was made to record the answers using a tape recorder.

4. The usual limitations of the questionnaire method of survey.

a. Some respondents might have found it difficult to answer the questions in Part II Section A of the questionnaire. Since some questions were directly related to the general atmosphere of the institution.

b. Some questions in the questionnaires were left unanswered by some respondents.

c. Some respondents might not have understood the questions in the same way as the investigator intended due to barriers in communication.

d. The respondents might not have expressed their frank views always.

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