CHAPTER : V

EXPERIMENTATION

The experiment was conducted on three equated groups of pupils in each school matched for mean and standard deviation in their performance on the pre pre-test. The matched group experimental design is often used in educational experiments. It is based on John Stuart Mill's law of single variable which sta tes "if two situations are similar in every respect, and one element is added to or subtracted from one but not the other, any difference that develops is the result of the operation of that element added to or subtracted". In this experiment, the experimental factor was the programmed filmstrip lessons. They were presented through two media, one with the teacher and the other without the teacher's explanation and were compared with a third group which was given instruction

through the conventional method. The details of the procedure adopted are explained in this chapter.

DESCRIPTION OF THE SAMPLE :

The sample for the study was chosen from nine schools, selected at random, from the schools in the city of Madras where practice teaching was done by the B.Ed. trainees. Experimentation was possible in such schools as they could accommodate the experiments, though it involved some dislocation in their routine work. The nine schools chosen were all Tamil medium schools, since this study was limited to Tamil medium secondary schools. More or less equal representation was given to boys' and girls' schools in this experiment. Co-educational schools were not selected for the study, since they were limited in number. Out of the schools selected, five were boys' and four were girls' schools. Care was taken to give representation to the two main types of school managements prevalent in the city of Madras viz., Government and private. Six were private schools and three government schools. In each school three sections from Std.X were randomly selected constituting a cluster. The strength in each section varied between 40 - 50. A cluster therefore, comprised 120 - 150 students. The sample for the study was drawn fromnnine such clusters. To obtain three

equated sections in each cluster, it was necessary to delete some students from each cluster, for the purpose of statistical analysis. Details related to this aspect are presented in the section to follow. The final sample analysed, had a total of 765 students, consisting of 450 boys and 316 girls. The experiment depended on factors like the availability of darkroom for showing the films, calm environment etc. Table 5.1 shows the details about the sample selection with regard to the number of schools, nature of schools, sexwise and managementwise, number in each cluster and the sample chosen from each cluster.

TABLE : 5.1

Table showing the details of the sample chosen from nine Schools.

S.No.	Name of the schools	Sex	Management	Total population of the cluster	Total No. selected for the experiment
1.	Wesley High School	Boys	Private	167	90
2.	Kellett High School	Boys	"	139	90
3.	Hindu High School	Boys	"	137	90
4.	Kodambakkam Govt. High School	Boys	Government	131	90
5.	Chintadripet High School	Boys	Private	134	90
6.	Monhan High School	Girls	Private	102	75
7.	G.S.P.Girls' High School	Girls	"	121	75
8.	Choolaimedu Govt. High School	Girls	Government	126	75
9.	Presidency High School	Girls	Government	128	90

MATCHING THE GROUPS :

Matching was done on the basis of the pupils' performance on the pre pretest. The pre pretest was administered to the three sections of std. X and the scores tabulated. The tabulated scores of each section were grouped under ten class intervals starting from 0-5 and ending with 45 - 50. The pupils were thus classified into ten class intervals in each section. From each class interval a few pupils were chosen at random. If, for example, from the class interval 25 - 30, four pupils were selected in Section A, four pupils were chosen from the classinterval 25 - 30 in section B and four in section C from the same classinterval of that section. Thus in each class, the same number was chosen from the class invervals, as was done in the other two sections. It was done with the view to getting the same number of students for all the three groups, andhaving at the same time identifal mean and standard deviation. This necessitated deletion of a large number of students from each cluster for statistical analysis, inspite of these students undergoing the treatment. Table 5.2 explains the organisation of three matched groups in each school.

TABLE : 5.2

MATCHED GROUPS IN THE NINE SCHOOLS

S.No.	Name of the School	Medium (Group)	N	M	σ
1.	Wesley High School	I	30	22.17	11.7
		II	30	22.17	11.7
		III	30.	22.17	11.7
2.	Kellett High School	I	30	22.33	11.74
		II	30	22.33	11.74
		III	30	22.33	11.74
3.	Hindu High School	I	30	24.35	12.51
		II	30	24.35	12.51
		III	30	24.35	12.51
4.	Kodambakkam Govt. High School	I	30	20.83	11.66
		II	30	20.83	11.66
		III	30	20.83	11.66
5.	Chintadripet	I	30	22.5	12.24
		II	30	22.5	12.24
		III	30	22.5	12.24
6.	Monahan Girls' High School	I	25	22	9.89
		II	25	22	9.89
		III	25	22	9.89
7.	Guntur Subbiah Pillai Girls' School	I	25	21.6	9.85
		II	25	21.6	9.85
		III	25	21.6	9.85
8.	Govt.Girls' High School,Choolaimedu	I	25	22	9.89
		II	25	22	9.89
		III	25	22	9.89
9.	Presidency Girls' School	I	30	22.83	9.25
		II	30	22.83	9.25
		III	30	22.83	9.25

Note: The identical means and standard deviations observed for the three groups have been achieved through the deletion of a large number of subjects (about 40 - 50 %) and deliberately selecting the subjects inorder to attain this.

THE PLAN OF THE EXPERIMENT :

The experiment was conducted in nine schools. In each school three groups were formed and were given instruction simultaneously. The experiment was conducted in two parts which are referred to as cycles. In cycle I the experiment was conducted on three days in the pattern described in Chart III which follows :

1st day : The three sections were administered the pre pre-test. It was followed by the administration of the four pre-tests one by one.

2nd day : Fore Noon :

Lesson on Buddhism Part I followed by the Post-test.

After Noon :

Lesson on Buddhism Part II followed by the Post-test.

3rd day : Fore Noon :

Lesson on Jainism Part I followed by the Post-test.

After Noon :

Lesson on Jainism Part II followed by the Post-test.

With that the first cycle came to an end. The three groups received instruction simulateneously and so there was no possibility of groups consulting each other.

After four weeks, the same tests were administered without prior notice. The purpose was to measure the delayed retention of the pupils' gain. It is referred to in this study as cycle II.

THE CONDUCT OF THE EXPERIMENT :

The experiment was conducted as described in what follows. On the appointed day, theteachers in charge of the experiment administered the Pre-pre-test. After gathering the answer scripts they informed the pupils that they were further to be tested on topics they had not studied. The pupils were told that failing would not harm them as they were not taught the lesson on Buddhism and Jainism. They were given instruction not to guess but to write what they knew. The four pre-tests were administered one after another. The pupils were administered the pre-tests on the same day because it was felt that if they were administered the pre-test before the lesson each day, they would try to make note of the questions and try to find out the answers,

thus affecting the natural way of learning. Most of the pupils were unable to answer most of the questions as they were not taught that unit. On the following day the pupils of the first group received instruction on Buddhism through programmed filmstrips and teacher's explanations. Teacher pupil interaction was encouraged. The teacher explained salient points and drew their attention to certain details of the pictures, as for example, the bulge on the head of Buddha which was the symbol of enlightenment. The pupils were given score sheets to record their answers. They were also given outline maps to mark the places. When the frame containing the map was projected, the teacher instructed them to mark the places on their outline maps. As soon as the lesson was over the score sheets and maps were collected from them and the post-test was administered.

In group II which is referred to as medium II, the instruction was only through the programmed filmstrip. No explanation was given. Extra-frame materials such as reference of Buddha's symbol of enlightenment were given When the map frames were projected the pupils were given instruction to mark the places on their maps. A part from such instruction no explanation was given to them. Post-test was administered on the completion of the lesson.

In group III which is referred as medium III, the teacher used the conventional lecture method. He used a

map and a time line chart as aids. Post test was administeered as soon as the lesson was over.

After four weeks the groups were administered a retention test. All the four tests were administered together.

Though all pupils in the class received the instruction and took part in the tests, only a few were chosen to be subjects in the experiment. The large scale elimination of p-upils was necessary to keep the N, mean and standard deviation of the matched groups identical.

On the completion of the experiment, the mean scores of all the nine medium I groups were combined to form M comb. of that medium. Similarly, the means of the other groups were combined to form three M. combs. The same procedure was followed to compute the σ comb. of the three mediums in the nine schools. The scores were then given statistical treatment. Details regarding the statistical analysis are presented in the chapter to follow.

CHART 3 | THE PLAN OF THE EXPERIMENT