3.1 PROCEDURE

Research is neither reading nor writing a textbook. It is not also haphazard looking for facts. It is essentially a systematic enquiry seeking facts through objective. It is here where the question of method or procedure comes in to discover the relationship among them and to deduce from them broad principles or laws. To quote Prof. Clifford Moody: "In the last analysis research per se constitutes a method for the discovery of truth which is really a method of critical thinking. It comprises defining and redefining problems; formulating, hypothesis or.
suggested solutions; collecting, organizing and evaluating data, making deductions and making conclusions and at last, carefully testing the conclusion to determine, whether they fit the formulated hypothesis.¹

The present study relates to the psychological sphere of children in a classroom. Published works on the subject are very limited and as such the present study had to rely mostly on some psychological tests like

(a) Memory Test
(b) Intelligence Test and
(c) Interview with the Teachers to collect the secondary data on the Past Performance of Pupils.

(vide appendix G).

In our present study emphasis is given on the discovery of facts. It is true that data gathered are interpreted but in a study of this type gathering facts is the dominant objective.

The present study had to be dependent on field data, mainly through administration of various types of tests.

¹. Journal of Educational Research 1927 p 172
on to the school children, the detailed interpretation of which along with supporting statistical analysis are given on the following chapters.

The investigator visited the residence of a few students particularly to get the real feel of the socio-economic and socio-cultural level of the families in which students live and develop. The personal experience of this on the spot visit has greatly paid the dividend in ascertaining the correct socio-economic status of the students in addition to administering them a socio-economic status scale (vide appendix H).

A questionnaire on socio-economic condition was handed over to each student to be passed on to their parents and guardians. Parents and guardians of the students co-operated greatly and sent back the questionnaire duly filled in with all the details. 80% of the students brought back the questionnaire duly completed while 20% did not respond.
Tests, as described in the Appendices (A, B, C, D & E) have been administered on 200 students out of which one hundred were boys and another one hundred were girls. The students belonged to the different schools of metropolitan areas of Calcutta. All the students were from Class VI and aged eleven years.

Psychological studies of this nature of the present study involve observation of the behaviours of the individuals and require to be dealt with from the macro angle.

This Feature, which in a way distinguishes the present study from physical ones, emphasises that studies in memory and on children of a particular age group, have to be dealt with from the 'macro' rather than from 'micro' angle.  

3.2 Tools of Investigation

Now-a-days various tests have been introduced in our country also for different research purposes. Introduction of intelligence test for admission of children into various classes have proved to be very helpful. 'Individual Tests' have however been much more dependable compared to 'Group Tests'. But individual tests are much more time consuming too. For this reason for research purposes Group Tests have been used to collect the primary data. There is hardly any of standardised group intelligence tests available in our Country. For the purpose of present study a patent group test procedure have been used which was recently developed and standardized by Dr. G.B. Kapat of Calcutta University.

The details of the experiments are being discussed in the subsequent paragraphs. This particular group test provides for both verbal and non verbal items to be solved by the children who have just crossed the primary stage. Depending on the nature of
problems the group tests have been set in five distinct divisions.

While administering the test it was kept in mind that, when a researcher studies human behaviour in society, he or she is really studying his or her ownself. This gives rise to certain limitations. As Julian Huxley put it "the fact that man must have to be his own guineapig has a number a methodological consequences both for social science research and for its practical application. For instance, it restricts the scope for controlled experiments."^3

Let us now discuss the detail of procedure adopted for data collection for the present study:

Essentially, the procedure consisted of study of two hundred students, of two different high schools. The data were collected from these sources. The tests employed in the present study include (1) Tests on Memory and (2) Intelligence Tests constructed and standardized.

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^3 Julian Huxley: Man in the Modern World, P 118.
by Dr. G.B. Kapat, Head of the Department of Education, Calcutta University.

The subjects for the study were male and female students studying in Class VI. Their age range was 9 - 11 years, about 90 percent belonged to the age group of 10 - 11 years.

3.3 Details of Test Administration

The tests on memory consisted of (1) memory for stories (Appendix A), (2) Memory for sentences (Appendix B), (3) Memory for Drawing (Appendix C) and (4) Memory for digits (Appendix D) which are shown in the following pages.

The tests were administered on different days in both the schools. One was a unisex (female) school and the other was a co-educational school. The children were told that it was not an examination, their response would be treated confidentially and their response would not affect their school report or progress.

4. Copies of Tests are enclosed in Appendix of this paper.
Before administration, the materials of the tests were checked, various sets of test papers were taken ready to be handed over to the pupils. As the medium of instruction of both the schools were English, the instruction of the tests were given in English only. Students were asked to sit in a set of two in one bench. They were asked to write their names, and age on the paper and then to keep aside the pen or pencils. They were asked not to consult with each other. The children were divided in several groups and each group consisted of 25 pupils.

Before starting each test, certain instructions (as it is written on the test material) were given to the students. After reading the story, the questions were read out one by one and they were asked to write the answers. No repetitions were made. Time limit was two seconds for each question. After finishing the Test No. I, Test No. II (Memory for sentence) was given. In this test also the same method was followed; the pupils were asked to write the sentence just after reading one sentence.
The third test was a test for drawing. Here two drawings of two different designs were shown to the pupils.
They were instructed to look at the drawing carefully. The drawings were exposed for 2 seconds and then they were asked to draw it.

Then the fourth test was administered in the same way. It was a test on memory, for digits. The whole test consisted from 4 digits up to 9 digits. In one school, tests were administered on 50 students (all girls). They were divided into two groups. In another school, tests were administered on 50 female students and the rest on 100 male students separately. After finishing the tests, answer papers were collected immediately.

Memory has got relation to intelligence; so here a group test on intelligence is also included. It consisted of five different tests (Appendix E). The same procedure of administration was followed here. Before distributing the test papers, the following instructions were given to the students. "I will give each one of you a test paper. Before saying anything don't open it. Keep it on your seats. Then the papers were

5. Copies are enclosed in the Appendix E of this paper.
distributed and said, you will find many interesting things in this paper. But listen carefully before going to start it. You will start as soon as I say and stop when I will ask you to stop. All of you may not be able to answer all the questions but try to answer as far as you can. Once I started don't ask anything in between. Now be ready."

When everybody was ready, Test No. I was started from the first page. It was told then, "See what is written here: (a) Look at the example first, take the pencils. In the first raw there are four pictures. A Chair, a Cat, a Rabbit and a Dog. Here you can see, 3 pictures are of the same group and the rest one is entirely different from them. Find out which is the different? Chair does not belong to the group. Is not it? So draw a line under that picture. In this way you try to answer the rest twenty questions. You will stop when I will say stop. You will be given 2 minutes time."
After Test No.I was over, the second test was administered by saying: "Now look at the example of Test II. Here are some drawings. In the 'A' Row see, the first is a square, then again a square of the same type, after that there is a circle and a note of interrogation at last, is not it? In the next row there are four types of drawings along with a number. You will have to find out such a drawing which will match the place where this (?) sign is given. We can find out the circle which is given on the next row. Let us write no.2 in the bracket given on the row "A". After giving the instructions they were asked to start - For this test the time limit was 5 minutes.

Then the Test No.III was started with the following instructions:

"In the row 'A' see, there are some Zeros one after
another but the last two places are kept blank. That means, the row is not completed. Notice carefully how the row is arranged and try to find out how can you complete the row. We can put Zero in the blank spaces and thus we can complete the row. Is not it? Now let us put Zero on the blank space of row 'A'. These instructions were given on the black-board, and then the students were asked to start and complete the test; 3 minutes' time was given for this test.

**TEST IV**

Before Test IV was administered the students were advised: "In this example of Test No. IV you have seen that in line 'A', 'Good' and 'Bad', these words are written. By the right side, two letters 'S' and 'O' are written. What is the meaning of the words, 'Good' and 'Bad'? Are they same or opposite? In the next line 'B' also, 'Wet' and 'Damp', these two words are written, the meaning is same and not opposite. Now for this we will draw a line under 'S'.

Now you try to answer the rest 12 words. If it means the same, then put a line under 'S' and if it means the opposite, then put a line under 'O'. For this test, one minute time was allotted.

**TEST V**

While proceeding to the Test V, the students were asked, "Look at the example 'A'; question is "why do we take bath?" on the right side there are three answers: (1) to keep cool, (2) to keep clean, and (3) to keep away from disease. Now can you tell me which is the proper answer? The answer No. 2 is the proper answer, is not it? Come, let us draw a line under answer No. 2. In this way the students were instructed to answer the rest 10 questions. In this test also one minute time was allotted.

All the students showed great interest in these tests. After collecting primary data through these tests, the achievement scores of these students in different school subjects were taken from the record book of their respective schools to form the secondary data. (vide appendix G).
A socio-economic status scale was used to collect information about the economic background of the students. The questionnaire sought information on educational background of parents/guardians, occupation and income. The questionnaire was handed over to the students and were told, "you should hand over this form to your parent and request him or her to fill in the same, when they find time." Amazingly a large section of guardians/parents showed willingness to co-operate and sent the questionnaire filled in within a week's time.

3.4 SELECTION OF SCHOOL

A school is a forum which is generally expected to be so geared as to bring about an all-round development of its students. As soon as children attain the Kindergarten stage, all parents/guardians prefer to send their child to school not really in expectation of acquiring knowledge but primarily to develop a habit of growing up with his mates in a disciplined environment. Mostly school administration pay attention for developing of its students' academic or intellectual aspect only. But despite such concerted effort academic attainments of

6. Kuppuswamy's Standardised Socio-economic Status Scale - Vide appendix H.
various students greatly differ. Why does it happen? Is it due to good teachers? or is it due to family background? or is it the classroom environment? or is it individual effort and merit? To solve these questions the selection of schools was very important.

For the present study such schools were necessary where —

1. Healthy Atmosphere exists to prosecute studies;
2. Teachers are properly trained to take up their assignments;
3. Good classrooms with proper ventilation, tools and facility of audio-visual aid exist;
4. Standard method of teaching is followed to impart education.

Even after getting the schools which fulfill the above stipulations it was very much necessary that the school must have (a) large number of students of homogenous age group (11 to 12 years), but (b) parents belonging to heterogenous social status and environment.

Schools which fulfil all the above conditions are rare because in Calcutta Metropolitan Area due to higher and higher tuition fee and other admission
requirements good schools have students mostly from upper and/or upper middle classes. Another important consideration for administration of various tests were that the sample must be male and the other half were to be female.

After great efforts we found out following four schools in the Metropolitan City of Calcutta which fulfills our requirement.

1. BIDYA BHARATI GIRLS HIGH SCHOOL
   Nalini Ranjan Avenue
   New Alipore, Calcutta 700 053.

2. JULIAN DAY SCHOOL
   Elgin Road
   Calcutta.

3. CENTRAL SCHOOL
   Port William
   Calcutta.

4. ST. TERESA'S SECONDARY SCHOOL
   Diamond Harbour Road
   Calcutta.
All the four schools were contacted personally and their co-operations were sought. Though BIDYA BHARATI HIGH SCHOOL and CENTRAL SCHOOL agreed willingly to co-operate with the project, other two schools failed to accommodate due to various past commitment of their own. From the above, it is apparent that though we had definite criterion of selection of schools ultimately we had to compromise on this issue as a matter of convenience.

We were however proud to associate BIDYA BHARATI SECONDARY SCHOOL and CENTRAL SCHOOL in our project.

The services rendered by the Management of these schools as well as the teaching staff would be a high water mark in any research project of such type.

Of the two, BIDYA BHARATI SECONDARY SCHOOL is a girls' school where students from higher and upper middle class families study, while CENTRAL SCHOOL have students from upper or lower middle class to lower class families. The medium of instruction in both the schools are the same, i.e., ENGLISH.