CHAPTER 4

PROCEDURE
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In this chapter the actual execution of the present investigation will be described. It will include details about the pre-pilot and pilot studies, the procedure of sampling, the characteristics of the sample, the actual administration of the tools and the techniques followed for the statistical analysis of the data.

4.1 The Pre-pilot Study:

Before carrying out the pilot study, a pre-pilot study was carried out on a small sample of thirty subjects of ten through fifteen years of age primarily to test the efficacy of the tentatively selected tools. The sample for the pre-pilot study comprised the following three age groups:

a) 10 and 11 years
b) 12 and 13 years
c) 14 and 15 years.

Ten subjects (five girls and five boys) each were included under each age group. The subjects were residents of the urban localities of Kolkata and students of reputed English-medium schools affiliated with C.B.S.E and I.C.S.E. The results of the pre-pilot study showed that the tentatively selected tools, as mentioned earlier in section 3.6, were appropriate for the given sample and effective for the measurement of the variables under investigation. Before carrying out the pre-pilot study, the investigator could not decide whether to use the Coopersmith Inventory, School Form or an Indian test of self-esteem. But during the pre-pilot study it was observed that the subjects could easily understand and respond to the statements of the Coopersmith Inventory. This was because they were reasonably well versed in the English language. So on the basis of the experience gained during the pre-pilot study, the Coopersmith Inventory,
School Form was finalized as a tool for the present investigation. The time taken by each individual to finish the task required by each tool (except GEFT which had a time limit) were carefully recorded during the pre-pilot study and the average time taken by the subjects to finish the tasks of each of the tools were computed. This would help in preparing a time-schedule of testing later on. The kind of difficulties faced by the subjects in comprehending the meanings of word or expressions given in the tools, in understanding the instructions of the tools and in performing the tasks required by each tool were carefully recorded. This would help in lessening the problems in the administration of the tools during actual data collection.

4.2 The Pilot Study:

Before the commencement of the actual data collection, a pilot study was conducted on a sample of 90 subjects which included 30 subjects each belonging to the three age-groups: a) 10 and 11 years, b) 12 and 13 years and c) 14 and 15 years. Each age-group comprised equal number of girls and boys of middle socio-economic status families, staying in urban localities of Kolkata and studying in reputed English-medium schools. The pilot study was carried out to verify the findings of the pre-pilot study conducted earlier on a smaller sample and to chalk out a time-schedule for the administration of the tools. During the pilot study, the tentatively selected tools were administered to the subjects in small groups of about 10 subjects each. The outcomes of the pre-pilot study were found to agree with those of the pilot study. It was found that the tentatively selected tools were suitable for the assessment of the variables under investigation and appropriate for the given sample. At the time of the pilot study, each subject was asked to accurately note on the answer-sheet of Goodenough-Harris Drawing Test and the Coopersmith Inventory, School Form the exact time at which he/she started doing the task required by that particular tool and also to record the exact time at which he/she finished the task. The noting of the time was not required in case of the Group Embedded Figures Test as it has prescribed time limits for each section. The times taken by each subject
to finish doing the tasks required by the Goodenough – Harris Drawing Test and the Coopersmith Inventory, School Form were calculated later on by the investigator. The average time taken by the subjects to complete the tasks required by the tools were then computed.

Apart form this, the time needed by the investigator to give the instructions and to actually administer each tool were also noted. On the basis of these time requirements, a tentative time – schedule for the administrations of the tools (presented in Table 4.1) was drawn up. The time – schedule was adhered to as much as possible during the actual data collection.

### Table 4.1

**TENTATIVE TIME – SCHEDULE FOR THE ADMINISTRATION OF TOOLS**

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Name of Tool/ Technique</th>
<th>Approximate Time Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Group Embedded Figures Test</td>
<td>20 minutes</td>
</tr>
<tr>
<td></td>
<td><strong>5 minutes of rest</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Coopersmith Inventory, School Form</td>
<td>15 minutes</td>
</tr>
<tr>
<td></td>
<td><strong>5 minutes of rest</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Goodenough - Harris Drawing Test</td>
<td>35 minutes</td>
</tr>
<tr>
<td>4</td>
<td>Interview to gather additional background information</td>
<td>10 minutes</td>
</tr>
<tr>
<td><strong>TOTAL TIME TAKEN</strong></td>
<td></td>
<td>1 hour 30 minutes (including 10 minutes of rest)</td>
</tr>
</tbody>
</table>
The types of problems faced by the subjects in doing the tasks required by the selected tools were noted by the investigator so that these difficulties could be removed, as far as possible, during the actual collection of data.

4.3 Procedural Details of the Investigation:

After carrying out the pre-pilot and the pilot studies, the process of actual data collection began. For that, at first, an area sample was drawn from amongst the ten to fifteen year old girls and boys residing in the urban localities of Kolkata. The city was divided into five regions—east, west, north, south, and central for drawing the area sample. Each region included many localities some of which were randomly chosen for inclusion in the sample. The names of the selected localities from each region are mentioned in section 4.7. Certain households from these localities were randomly chosen for inclusion in the sample. The help of local residents, housing societies and clubs were sought and obtained for this purpose. Door-to-door surveys were carried out in many cases for identifying households with ten to fifteen year old girls and boys. Parental permissions were sought for data collection. In some cases tutorial homes, music and dance classes for children and adolescents were approached and their help enlisted for drawing the sample, identification of the subjects, obtaining of parental permissions and actual data collection.

Then, the area sample, so drawn, comprising ten to fifteen year old subjects were divided into three age-based strata: a) 10 and 11 years, b) 12 and 13 years and c) 14 and 15 years. Girls and boys belonging to each of the above strata were randomly selected from the population. Thus the technique of stratified sampling was employed. Subsequently, data were collected from the selected children and adolescents.

Data were collected from children and adolescents in small groups of about 10 individuals each. The venues for data collection included the homes of the
Before data collection, rapport was established with the subjects to motivate them. The objectives of the investigation were briefly explained to them in simple language. It was clearly stated to them that their identities would in no case be disclosed. These were done to gain their confidence. They were asked not to look at other’s work or consult with others while doing the tasks required by the tools. Then the three standardized tools were administered to the subjects one after the other following (as far as practicable) the Tentative Time—Schedule given earlier in Table 4.1. Care was taken to make sure that the methods of administration of the tools were as prescribed in the manuals and were uniform from one group of subjects to another. It was ensured that the subjects had filled—-in the identifying and background information correctly at the top of the booklets of the tools. The instructions as printed on the booklets/manuals of the tools were read out to the subjects without any changes. The time—limits of the different sections of the Group Embedded Figures Test were strictly maintained. Rest pauses were given in between the administration of the different tools. At the end of the administration of the three standardized tools, some additional background information was elicited from each subject by the investigator using the interview technique. This information was carefully noted. After data collection from a group of subjects was over, the subjects were thanked for their cooperation and allowed to leave.

Subsequent to data collection from each group of subjects, the investigator initially scanned the background information (gathered by means of the identifying information printed at the top of the standardized tools and augmented by using the interview technique) obtained from each subject so that multi—stage random sampling technique could be applied to draw the final sample of investigation. After data collection and scanning of the background information of the subjects, the technique of multi—stage random sampling was used. The method of elimination of individuals was followed at every stage. The data obtained from the children and adolescents who did not meet the criteria of
inclusion in the sample were discarded stage by stage. Firstly, only some of those individuals who belonged to the middle socioeconomic status families (as inferred from the occupations of their parents) were randomly selected. Then from among them, some of those children and adolescents who studied in English – medium schools were randomly selected. Next, some of these individuals who studied in reputed schools affiliated with the C. B. S. E. and I. C. S. E. were randomly selected. Finally from among these children and adolescents, a random sample of those who did not take private lessons in art found their place in the final sample.

Thereafter, the data obtained from individuals belonging to the final sample using the standardized tools were scrutinized. Data with incomplete responses or data from subjects who manifested casual attitude during testing were not considered for scoring. At first, the copies of the Coopersmith Inventory, School Form were scored. The data from those subjects who scored more than 4 on the 8 – item Lie Scale were discarded. The data elicited from them by administering the Goodenough – Harris Drawing Test and the Group Embedded Figures Test were not scored. After scoring the Coopersmith Inventory, School Form, the scoring of the Group Embedded Figures Test was done. At the end, the copies of the Goodenough – Harris Drawing Test were scored. In each case, the scoring – procedures mentioned in the manuals of the standardized tools were strictly conformed to. Scoring keys provided with the tools were used to score the tools.

In this way data collection from small groups of subjects and scoring of the data continued till the sample reached an appropriate size. It was ensured that the sample included equal numbers of individuals in each age – based stratum and equal numbers of girls and boys within each stratum.
4.4 Standard Measures Adopted During Data Collection:

In order to maintain uniformity in the procedure of data collection from different groups of subjects, the following standard measures were adopted:

i) Data were collected from small groups of approximately 10 subjects each.

ii) To ensure that the subjects do not talk to one another, look at others’ works and copy from others, they were made to sit some distance apart from each other.

iii) Before the administration of the tools, rapport was formed with the subjects. They were briefly explained the objectives of the investigation and assured of confidentiality of their responses. These were done to motivate them and to ensure their cooperation.

iv) The tentative time – schedule for the administration of the tools, drawn up beforehand and given in Table 4.1, was followed as far as possible, in each case.

v) Care was taken to make sure that all the subjects had correctly filled in the identifying information at the top of the test booklets.

vi) The instructions printed on the test booklets or in the manuals of the tools were read aloud clearly to the subjects without modifying the words or expressions used in any way.

vii) In case of Group Embedded Figures Test with specified time limits for each section, the time limits were strictly maintained. No subject was permitted to work beyond the time limits.
viii) The investigator took the assistance of another person (having experience in the administration of the psychological tests) during data collection to ensure the proper administration of the tools.

ix) It was made sure that each subject had understood the instructions and the task to be performed, before telling the subjects to start working on a tool.

x) Whenever any subject asked the meaning of a word or expression used in the Coopersmith Inventory, School Form, the meaning of that word given in the dictionary or the meaning of that expression as decided upon beforehand were always told by the investigator and her assistant.

xi) During the brief interview to gather additional background information from the subjects, each subject was individually asked the same questions in the same sequence by the investigator. The investigator herself noted down the subject's responses at the back of the Goodenough – Harris Drawing Test booklets.

4.5 Administration Of The Tools:

The administration of the tools are discussed in the order these were presented to the subjects during data collection.

i) Group Embedded Figures Test

Initially, rapport was established with the group of subjects. The general aims of the investigation were briefly explained to them. Then, test booklets of the Group Embedded Figures Test, pencils and erasers were distributed among the subjects. They were directed to fill in the identifying information on the cover page of the booklet. After all the subjects had filled in the information properly, the investigator read out the instructions given in the test manual to them. The
investigator announced, "Now start reading the Directions, which include 2 practice problems for you to do. When you get to the end of the Directions on Page 3, please stop. Do not go beyond Page 3." The investigator and her assistant circulated in the room making sure that all the subjects were doing the two practice problems correctly and that they did not turn beyond Page 3.

When everyone had completed reading the directions on Page 3, the investigator said, "Before I give the signal to start, let me review the points to keep in mind." Then the investigator read aloud the statements printed at the bottom of Page 3.

The investigator announced,

"1. Look back at the simple forms as often as necessary.
2. Erase all the mistakes.
3. Do the problems in order. Don't skip a problem unless you are absolutely stuck on it.
4. Trace only one simple form in each problem. You may see more than one, but just trace one of them.
5. The simple form is always present in the complex figure in the same size, the same proportions, and facing in the same direction as it appears on the back cover of this booklet."

Thereafter the investigator asked, "Are there any questions about the directions?" Then there was a pause so that the subjects could ask questions. The questions, if any, on the part of the subjects were answered. After that the investigator said, "Raise your hand if you need a new pencil during the test."

Subsequently, the investigator announced, "When I give the signal, turn the page and start the First Section. You will have 2 minutes for the 7 problems in the First Section. Stop when you reach the end of this section. Go ahead!" As the First Section was basically for practice so the investigator and her assistant circulated
in the room and gave additional explanations to those subjects who seemed to have problems in doing the practice items.

After 2 minutes were over, the investigator said, "Stop – whether you have finished or not. When I give the signal, turn the page and start the Second Section. You will have 5 minutes for the 9 problems in the Second Section. You may not finish all of them, but work as quickly and accurately as you can. Raise your hand if you need a pencil during the test. Ready, go ahead."

The investigator and her assistant circulated in the room as the subjects were attempting the items in the Second Section to ensure that there was no copying from others' work or consultation among the subjects. After 5 minutes were over, the investigator said, "Stop – whether you have finished or not. When I give the signal, turn the page and start the Third Section. You will have 5 minutes for the 9 problems in the Third Section. Raise your hand if you need a new pencil during the test. Ready, go ahead."

After 5 minutes were over, the investigator announced, "Stop – whether you have finished or not. Please close your test booklets." The investigator and her assistant swiftly collected all the test booklets and pencils from the subjects.

Then a rest pause of 5 minutes was allowed. After that the subjects were administered the Coopersmith Inventory, School Form.

ii) Coopersmith Inventory, School Form

At the outset the investigator announced, "Today you will be filling out a questionnaire. Your answers will help me know you and your likes and dislikes better." Then copies of the Coopersmith Inventory, School Form and pens were distributed among the group of subjects. After that the investigator told the subjects, "Please fill in the identifying information for example your name, age
etc. on the cover page of the questionnaire." The investigator and her assistant circulated in the room to check whether the identifying information were filled in properly. Then the investigator said, "Now I will read aloud the directions printed on the cover page of the questionnaire. Listen carefully and read along silently with me." The investigator paused briefly so that all the subjects settled down and paid attention.

Then she read out, "On the next pages, you will find a list of statements about feelings. If a statement describes how you usually feel, put an X in the column Like Me. If the statement does not describe how you usually feel, put an X in the column Unlike Me. There are no right and wrong answers."

After that it was found out whether all the subjects had understood the task they had to do. Doubts on the parts of the subjects were resolved. Once it was made sure that all of them had understood the task, they were told, "Open your questionnaire and begin answering." The investigator assured the subjects of confidentiality of their answers and asked them to consult her in case they faced any difficulty in comprehending the meaning of the words or statements.

The investigator and her assistant moved around in the room to make sure that everyone was doing the task properly. They also solved the problems, if any, on the part of the subjects regarding the meanings of words and expressions mentioned in the inventory. However, caution was exercised so as not to influence the responses of the subjects in any way. After all the subjects had finished answering the inventory, the copies of the inventory were quickly collected and checked to ensure that the identifying information had been completely filled in.

Then, again, a rest pause of 5 minutes was given to the subjects before beginning the administration of the Goodenough – Harris Drawing Test.
iii) Goodenough – Harris Drawing Test

Initially, the copies of the Goodenough – Harris Drawing Test booklets and pencils were distributed among the group of subjects. Then the subjects were asked to fill in the identifying information at the top of cover page of the booklet in the spaces provided. The investigator and her assistant moved about in the room to make sure that all the subjects were filling in the information properly. Any doubts on the part of the subjects regarding the filling in of the information were cleared. When all the subjects had finished filling in the information, they were told to fold the cover page of the booklet back so that the space for the first drawing was exposed. The investigator’s assistant checked whether all the subjects had indeed exposed the space for the first drawing.

Then the investigator announced, “I am going to ask you to make three pictures for me today. We will make them one at a time. On this first page I want you to make a picture of a man. Make the very best picture you can; take your time and work very carefully. I want to see whether the boys and girls in your school can do as well as those in other schools. Try very hard, and see what good pictures you can make. Be sure to make the whole man, not just his head and shoulders.”

After that the subjects started drawing the picture of a man. The investigator and her assistant strolled about the room, encouraging subjects who were slow or who seemed to have difficulty by saying, “These drawings are very fine; you boys and girls are doing very well.” The investigator and her assistant refrained from making adverse comments or criticisms and did not give suggestions. If any subject wished to write about his/her picture, he or she was allowed to do so at the bottom of the sheet. If the subjects asked for further instructions such as whether the man was to be doing anything particular like working or running, the investigator clarified, “Do it whatever way you think is best.” Giving any further specific instructions was avoided. If a subject accompanied his/her work with a
running commentary, then the investigator firmly said, "No one must tell about his or her picture now. Wait until everybody has finished."

When the subjects had completed the first drawing, they were praised and told to turn over the sheet to the space for the second drawing. After making sure that everyone had indeed exposed the space for the second drawing, the investigator announced, "This time I want you to make a picture of a woman. Make the very best picture that you can; take your time and work very carefully. Be sure to make the whole woman, not just her head and shoulders."

Then the subjects began drawing the picture of a woman. The investigator and her assistant circulated in the room to motivate the subjects and to solve difficulties, if any. After the subjects finished the second drawing, they were praised lavishly to keep up their interest. Then the investigator demonstrated how to refold the sheets so that the two completed drawings were inside and the space for the third drawing was face up. The investigator's assistant verified whether all the subjects had the space for the third drawing exposed.

Subsequently, the investigator announced, "This picture is to be someone you know very well, so it should be the best of all. I want each of you to make a picture of yourself – your whole self – not just your face. Perhaps you don't know it but many of the greatest artists liked to make their own portraits, and these are often among their best and most famous pictures. So take care and make this last one the very best of the three."

After that the subjects began drawing the last picture. Whenever a subject indicated that he/she had finished the task, the investigator's assistant scanned the filled in identifying information and the three drawings. Then she collected the test booklet and the pencil. She handed the booklet to the investigator who took the subject aside for a brief interview. Meanwhile the investigator's assistant moved about in the room keeping an eye on the subjects who were still working.
She collected the booklets and pencils from the subjects and sent them one by one to the investigator for the interview.

4.6 Brief Interview to Gather Additional Background Information:

The investigator interviewed each subject individually for a very short period of time using a set of five pre-determined questions. Before beginning to ask the questions, the subject was asked to sit down comfortably; answer accurately and honestly. The investigator asked each subject the following five questions in the same order:

“i) What is your home address?
ii) What is your mother’s occupation i.e. what does she do for a living?
iii) Which board of education is your school affiliated with?
iv) Which is the medium or language of instruction at your school?
v) Do you take art lessons at home or at an art school?”

In case a subject did not understand a question, clarifications were given. The subject’s answers were noted down carefully by the investigator herself at the back of the Goodenough – Harris Drawing Test booklet of the subject. After eliciting the relevant background information from the subject, he/she was profusely thanked for participating in data collection and allowed to leave.

The background information furnished by the subjects either in the form of the identifying information filled in on the cover page of the test booklets or in response to the questions asked during the brief interview session were confirmed by the investigator, in cases of doubt, by speaking with the parents, teachers, other children etc.
4.7 Sampling Procedure:

The procedure of sampling combined the techniques of area sampling, stratified random sampling and multi-stage random sampling. This was in accordance with the plan of sampling stated earlier in section 3.7. Initially the technique of area sampling was employed to randomly select certain localities from the five regions of the city of Kolkata viz., east, west, north, south and central. The selected localities were included under twenty three (out of 141) wards of Kolkata Municipal Corporation. A map of Kolkata showing the randomly chosen localities is presented as Figure 4.1. The list of the selected localities and their corresponding ward numbers appear in Table 4.2.

**TABLE 4.2**

**LIST OF LOCALITIES OF KOLKATA CITY CHOSEN FOR INCLUSION IN THE AREA SAMPLE**

<table>
<thead>
<tr>
<th>Region of The City</th>
<th>Name of Locality</th>
<th>Ward Number of Kolkata Municipal Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>Ultadanga</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Beliaghata</td>
<td>33; 34; 35</td>
</tr>
<tr>
<td></td>
<td>Eastern Metropolitan Bypass</td>
<td>57; 58</td>
</tr>
<tr>
<td>West</td>
<td>Jorasanko</td>
<td>22; 23</td>
</tr>
<tr>
<td></td>
<td>Burrabazar</td>
<td>42</td>
</tr>
<tr>
<td>North</td>
<td>Sinthee</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Girish Park</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Shovabazar</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Shyambazar</td>
<td>10; 11; 12</td>
</tr>
<tr>
<td>South</td>
<td>Bhawanipur</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Alipore</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Jodhpur Park</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Garla</td>
<td>110</td>
</tr>
<tr>
<td>Central</td>
<td>Chandni Chowk</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Bowbazar</td>
<td>50; 51</td>
</tr>
<tr>
<td></td>
<td>Dharamtallah (Esplanade)</td>
<td>63</td>
</tr>
</tbody>
</table>
Inspection of Table 4.2 reveals that the numbers of localities and wards from each region of the city are unequal. This was because of certain practical constraints. Firstly, the present investigator had to fulfill the requirement of selecting almost equal numbers of subjects from each region of the city. Even the regions were not equal in size. The geography of Kolkata is such that the Western region, being bound by river Hooghly on one side, comprises fewer localities. Secondly some of the localities were spread over many wards while some were confined to one ward. Thirdly, the population of the different localities differed. Finally, the investigator had to include equal numbers of subjects from each age-based stratum as well as equal numbers of girls and boys in each stratum.

A few streets from each locality were randomly selected by consulting road directories. Then lists of houses on those streets were obtained with the help of local clubs, residents’ associations, housing societies and in some cases individual residents of the area. These lists aided the random selection of certain houses on those streets for possible inclusion in the area sample. After obtaining information about the occupants of these houses, only those households with ten to fifteen year old girls and boys were included in the area sample. The age-range of ten to fifteen years was then divided into three strata: a) 10 and 11 years, b) 12 and 13 years as well as c) 14 and 15 years. Girls and boys of these age-groups were randomly selected to ensure equal representation of each stratum in the sample. Thus the technique of stratified sampling was used.

Then data were collected from the selected subjects. Following which, the background information elicited from the subjects was scrutinized to facilitate the drawing of the multi-stage random sample. Subjects who did not conform to the criteria of inclusion in the sample were eliminated at every stage. In this way, only the subjects belonging to middle socio-economic status families (as inferred from their parental occupations), studying in reputed English-medium schools affiliated with the C.B.S.E. and the I.C.S.E. and not taking private lessons in art were randomly selected for inclusion in the final sample.
For inferring middle socio-economic status from the occupations of the parents of the subjects, the manual of the Socio–Economic Status Scale (Urban) developed by Kuppuswamy(1962; 1984) was consulted. If the occupations of both the parents or the better employed parent matched any of the occupations listed as semi–professional or professional by Kuppuswamy(1962; 1984), it was regarded as an evidence that the subject belonged to a middle socio-economic status family. The offsprings of parents engaged in business were not included in the sample as it is difficult to assess the magnitudes of businesses and therefore to be sure about the socio–economic status of those families. The list of semi–professional occupations included diploma–holding engineers; high school teachers; college lecturers; junior administrators and doctors; insurance inspectors; musicians; research assistants etc. The professionals comprised the graduate engineers; senior administrative officers, doctors, advocates and lecturers; readers and professors; college principals; expert musicians; senior journalists, auditors; architects; company executives; bank managers etc.(Kuppuswamy, 1962;1984). It is, thus evident that the semi – professionals and the professionals occupy the middle and upper levels of the middle socio–economic status respectively.

After the data collection, 318 subjects were excluded from the sample. The reasons for exclusion are:

a) 92 subjects were eliminated because they did not belong to the middle socio–economic status families (as inferred from their parental occupations).

b) 75 subjects were excluded as they did not study in English–medium schools.
c) 38 subjects were not included because they did not study in schools affiliated with the C.B.S.E. or I.C.S.E.

d) 44 subjects were eliminated as they took private lessons in art.

e) 37 subjects were excluded as they scored more than four on the Lie Scale of the Coopersmith Inventory, School Form.

f) 18 subjects were eliminated for displaying casual attitude, lack of motivation and non-cooperation during data collection.

g) 14 subjects were excluded as they had given either doubtful or incomplete responses.

Care was taken to include subjects from each region of the city and equal numbers of subjects from each age-based stratum in the final sample. It was also ensured that equal numbers of girls and boys found place in each stratum. Although it was planned to include 500 girls and boys in the sample (as stated in section 3.7) but the actual sample size turned out to be 600 to accommodate 200 subjects in each of the three age-strata.

4.8 Characteristics of the Sample:

1) The size of the sample was 600 comprising 10 to 15 year old girls and boys drawn from the population. The sample included equal numbers of girls and boys i.e. 300 each.
II) A combination of area sampling, stratified random sampling and multi-stage random sampling techniques was used for sample selection. So the sample comprised of 3 age based strata i.e.,

i) 9 years 12 months to 11 years 11 months (10 and 11 years),
ii) 11 years 12 months to 13 years 11 months (12 and 13 years)
iii) 13 years 12 months to 15 years 11 months (14 and 15 years).

Each stratum included 200 individuals i.e. 100 girls and 100 boys.

The age-wise and gender-wise composition of the sample is presented in Fig 4.2.

III) Approximately equal numbers of subjects were selected for inclusion in each stratum of the sample from different parts of Kolkata- east, west, north, south and central.

IV) The sample comprised of girls and boys studying in reputed English medium schools of Kolkata which were affiliated with C. B. S. E. and I. C. S. E. Approximately equal numbers of subjects studying in C.B.S.E. and I.C.S.E. affiliated schools were selected for inclusion in each stratum of the sample.

V) The subjects belonged to middle socio economic status families considering their parents’ occupations as reported by them and in some cases confirmed by their parents.

VI) The sample included only those subjects who did not take private lessons in art.
Fig. 4.2  Age-Wise and Gender-Wise Composition of the Sample.
4.9 Procedure of Analysis of the Data:

After scoring the standardized tests, the raw scores were obtained. For this, the procedures prescribed in the manuals of the tests were followed. However the authors’ norms were not referred to in any case. The raw scores of all the subjects were tabulated. Then the computerized statistical analysis of the tabulated data was carried out. For computation of means, standard deviations, product – moment correlation coefficients, Two – Way Analysis of Variance and Multiple Regression Analysis (for the entire sample), the SPSS version 11.0 was used on Windows XP. While for the Multiple Regression Analysis of the separate age – groups, the BMDP version 10.0 was used on the Sun Enterprise 3000 Gnome 2.0 Operating System.

As planned beforehand in section 3.8, at first the mean and S.D. values were calculated. The mean and S.D. values were found out not only for the entire sample(N = 600) but also separately for the three age – groups and the gender – groups within each age – group with respect to the three variables under study viz., human-figure drawing, self esteem and cognitive style. Then the Two – Way Analysis of Variance was conducted to study the effects of gender, age and the interaction of gender and age on the dependent variables of the investigation for the entire sample.

After that product – moment correlations among the variables of human – figure drawing, self esteem and cognitive style were computed for the entire sample and separately for the three age – groups. This was followed by the Multiple Regression Analyses which were conducted in order to find out whether the subjects’ scores on the performance variable i.e., human figure drawing could be predicted on the basis of their scores on the psychological variables of the investigation viz., self esteem and cognitive style. Again, the Multiple Regression Analyses were carried out not only for the entire sample but also for each of the three age – groups.
This chapter has, thus, discussed the procedural details of the present investigation in a nutshell. It will now be interesting to know the results of the investigation. So the findings are presented and discussed in the following chapter.