

## Chapter 4

# TOOLS, TECHNIQUES AND PROCEDURAL DETAILS

### 4.0.0. Introduction

The previous chapter articulated the design for the present study in detail. This also included the rationale of selecting particular variables as well as the description of these variables. As such, the present chapter is to elaborate upon the tools and techniques used for the data collection and the procedural details of the data collection process. To begin with the first section in this chapter deals with the operationalisation of the eight variables of the causal model and the tools used to collect the information. In the second section, details of the techniques employed for the collection of quantitative and qualitative data are presented, while the third section deals with the procedural details of data collection.

### 4.1.0 Operationalisation of variables and the tools used

#### 4.1.1 Mother's Education (ME):

Mother's Education alongwith the Gender of the child is the exogenous variable in the causal model. The level of Mother's Education is taken to be the primary variable that could be affecting the educational environment and the interaction patterns at home. Mother's education here refers to the years of formal education the mother has had. As such the individual mother's education could be rated on 0 years to 19 years scale. The 0 to 19 years scale is formulated in view of the minimum and maximum years of education possible in the formal education system that is, 1 to 11 years of

schooling, 4 years of intermediate and degree course plus 2 to 4 years of post graduation. This scaling was considered to be broad enough to take care of the professional courses also.

#### 4.1.2 Gender of the child (G):

Gender of the child appears in the hypothesised causal model not as a biological variable, but as a social-cultural one. Information of the child's gender was to be collected by examining the school records. Since the sample distribution on this variable was to be subjected to quantitative analytical techniques, it was decided to assign a numerical value to each of the two nominal categories in which the children in the sample were distributed on the basis of their gender. The numerical value assigned to 'female' was '01' and to 'male' was '02'. To treat a natural dichotomy like gender numerically is not the best way to process information on this parameter. However, for the sake of simplicity in design, this exercise was undertaken. Literature in the field of path analysis gives instances where similar attempts have been made (see chapter 5).

#### 4.1.3. Educational environment at home (EEH):

The Educational Environment essentially is the support and guidance the family provides for the education of the child. For the present study, Dave's (1963) concept of Educational Environment has been taken as a guiding principle to define the variable Educational Environment at Home. The tool used is also based on the Educational Environment at Home Scale constructed by Dave. Dave's concept and tool has been widely used, in different settings by researchers studying home environments. Studies by Marjoribanks, Dyer and Kellaghan (see chapter 2) had used the measure of Educational Environment at Home as used by Dave. A few other studies in this direction have further elaborated the concept of Educational Environment at

Home (see chapter 2). The educational Environment at Home score has consistently shown high correlation with the Academic Achievement in these various studies.

Dave defined educational environment in terms of 6 press variables - achievement press, language models, academic guidance, activeness of the family, intellectuality in the home and work habits in the family. Believing in the premise that it is what the parents do rather than what they are (their background, income, caste, etc.) that contributes to the learning development of children in early years, Dave explicated the six press variables in terms of specific and pertinent process characteristics. Dave however felt that these characteristics should not be viewed as list of rules to be followed mechanically. He suggested that if these ideas were to be applied in a specific home or to a specific group they must be reinterpreted in relation to the home circumstances, the background of the parents and children and the relations between homes and schools. For the present study an adapted version of Dave's tool has been used with slight modifications. The modifications have been done in view of the sample under study - the first standard children belonging to the lower middle class urban Indian families.

The tool has five press variables as the 'core' of the Educational Environment at Home. They are: 1. Working habits of the family; 2. Academic guidance and support; 3. Stimulation to explore and discuss; 4. Language development in the home; 5. Academic aspirations and expectations. Each of the five press variables have been further explicated in terms of five process characteristics. Each process characteristic represented a single process occurring at home. The press variable of Language development which in the original tool had only three process characteristic is explicated in terms of five process characteristics. Again changes have been made in characteristics which were felt to have two or more process

characteristic. Such characteristics have been explicated to represent only one characteristic. The scale thus has 25 process characteristics on which the individual family's educational environment is to be scored.

For the present research, the scoring pattern for the scale has been slightly modified. In the original, process which is rarely done or emphasised in a home got a '0', a process that is frequently done or emphasised in a home got a '+' marking whereas something that is given great emphasis or is especially emphasised at home got '++' marking. The final score was arrived at by counting the total number of the plus marks. Homes with 11 or more plus marks were taken to be among the top 25 percent of homes in the encouragement and support they give to their children for school learning. Homes with nine or more plus marks were taken to be belonging to the top 50 percent of homes in the encouragement and support they give to children for school learning. Lastly, homes with 7 or fewer plus marks were taken as the bottom 25 percent of homes in encouragement and support they give to the children for school learning. The tool description given in that particular write-up is given as a self evaluation form for educated parents for evaluating their educational environment at home.

For the present study the tool was to be used to give an index of the educational environment of a group of lower middle class homes, where parental education level varied. Since the scores of the present tool was to be further processed for statistical analysis the scoring pattern was also modified in view of this requirement. The scoring scheme was as follows: process rarely done at home got the score '1', processes frequently done got the score '2' whereas processes emphasised greatly got a score of '3'. The range of scores thus was 25 to 75. Homes were not categorized in any categories on the basis of their total score. An elaboration of the tool follows.

## I. Work habits of the family (both parents and children) :

Dave in his study had found that children from homes with a clear structure, shared responsibilities and set household routines, learnt better in school than children from homes where a total laissez-faire atmosphere prevailed. A certain degree of structure and routine at home was essential for good work-habits in matters of school work as well as other work. Children seemed to need a well balanced routine whereby they have time to study, work, eat and play, and get adequate rest.

1. There is a clear plan for work and play for the children: There is a set routine for the children, whereby there are fixed timings for play, school work and rest. The children generally follow this routine without frequent changes on account of things like guests, outings, child's moods and temper tantrums or parental preoccupations.

2. Time for work and sleep is well balanced: Planning for the day has another important aspect, that is balancing of the time for different activities. This refers to the allotment of time in hours that is given to each activity. For example it would be inappropriate if the child spends just half an hour at play and on the other hand spends almost two to three hours for school work, or the vice versa.

3. Priority is given to the school work over other activities: This refers to the preference given by the family to school work over other activities, For instance scheduling of the school work towards the end of the day when the young child is tired or likely to be distracted by T.V. programmes, etc., may be inappropriate.

4. The child is not disturbed during the study hour: During the validation of the tool for the present research it was observed that

the parents (as observed in the lower middle class milieu) did not have any qualms about asking the child to run an errand or do a small chore while she was studying. The logic invariably put forth was that she is after all not studying for her M.A. exams! As such this process variable was included in view of the present sample.

5. Work schedule of the household is synchronised with the child's routine: This refers to the general organisation of the household activities. Household routines tuned to the child's needs add to the sense of a regular routine to the child. Frequent rescheduling of household routines in terms of meal times or work hours is most likely to upset the child's routine as well.

## II. Academic Guidance and Support :

School learning is no easy task; for many it is a long and arduous task. Almost every child encounters some very difficult problems in tackling the different school subjects. Support and encouragement from the family members are essential during the years of schooling. Unless there is someone to help the child over the difficulties encountered, she may despair of ability to learn. Encouragement and guidance are a must during the schooling years. Dave found that homes differ greatly in the amount of encouragement and support they give to the children. Support at home enables the child to overcome difficulties and adjust well to the school. Some of the things the home did to encourage children were identified as follows:

1. Encouragement and interest is done in child's academic work: The child is encouraged in many different ways. This could include praise and approval for good school work, speaking approvingly of the child to others, it may also include small little rewards and gifts related to something the child has done well. More importantly it entails taking interest in the child's school work , her sub

jects, her teacher, the content taught, etc.

2. The adult family members provide guidance to the child in school work: The family members spend time and take interest in supervising the child's school work everyday. The concerned family member checks the syllabus taught in the school, the home work given, the assignment and test schedules, and sees to it that the child follows the schedule and does the given assignments correctly.

3. Child is provided with all the books and things required for the school: The child is provided with all the things necessary for the school like text books, notebooks, erasers, pencils, etc.

4. Concern is shown over the child's problems and adjustment at school: Apart from the knowledge of child's academic progress the parents show concern also of the other aspects of school life. This refers to the child's adjustment and behavioural problems at school if any, her adjustment with her teacher and peers, her participation in other classroom activities, etc.

5. Availability of a quiet place to study: According to Dave, availability of a quiet place minus any distractions too is of importance to the school going child. This is to help the child's concentration and diligence while she does her school task. A systematic way of study is bound to enhance the performance in school.

### III. Stimulation to explore and discuss:

The reference here is to the 'educative' environment the home has in terms of the informal educative environment related to the activities of other members in the family. This refers to the conversations and other interchanges within the family, the games, hobbies and special interests of the family members; and to the shared activities of the family in play, reading, visits to museums

libraries and other cultural activities. There is no deliberate 'teaching' here yet the child 'learns' imbibing the information, values and interests created by the stimulating home environment.

1. Family's interest in hobbies, games, and other activities of educative value: An informal learning environment is created in the family when the family members have a varied interests and hobbies, this includes interest in games, music and other cultural activities. The environment becomes far more enriching when the interests pursued have more of educative value.

2. Family's use and discussion of books, magazines, newspaper, etc.: Ideally, members of the family should participate in the reading activities and discuss the ideas, views and subjects included in the reading. Discussions especially centred around, news items, selected educative T.V, programmes, etc., form an informal learning for the child.

3. Frequent use of libraries museums, science fair, etc.: Family visits to museums, zoos, historical sites, and other place of interest creates an awareness in the child. Even discussing about these events with the help of a book or a T.V. programme is of help.

4. Child has other materials like toys, blocks, story books, etc.: To widen the child's horizons, exposure to toys, blocks, story books and other educative books are essential. Such materials give the child an opportunity to explore, manipulate, imagine, think and acquire knowledge in a most informal way.

5. The day to day spare time activities of the different family members: How the family members spend their spare time everyday is of significance to the environment created at home. If the time is generally spent on endless talk about the neighbours and relatives it is bound to affect the child's orientation also.

#### IV. Language development in the home:

Language is an important tool in the learning process. Much of the learning in the school or outside is based on the use of language. It is largely based on the use of language. It is largely through listening, reading, talking, and writing that one learns the subjects in schools. These language skills are also the means by which one learns about ideas, topics and events outside the school. Language also is a requisite to store ideas in the mind and recall them. Again language is the means by which one communicates ideas and feelings with others. Therefore mastery over language enables one to gain knowledge as well as enhances the social competence. Home is the place where the individual may have the greatest opportunity to enlarge and enrich her language especially the mother tongue. The learning of language at home includes:

1. Child is encouraged to speak grammatically correct language: The parents are aware of the correct usage of language. They correct the child if she tends to speak incorrectly either grammatically or mispronounce words or use the wrong words.
2. The child is encouraged to enrich the vocabulary: Parents introduce newer words and concept to the child, through informal conversations, story telling or some games. Also the use of dictionary or reading materials is encouraged.
3. The child is encouraged to communicate freely her experiences: Language development depends greatly on the experience or exercise one has in using the language. Only when one experiments with different words, sentence formation, etc., will one gain confidence in using the language freely. As such, children who are given the opportunity to communicate freely at home are more likely to make better gains with their language development.

4. Adults spend time communicating with the child: It is essential that adults in the family spend time conversing with the child. Conversations could range on a broad spectrum of topics - talking about daily events, narrating stories or incidents, narrating information about many things in the environment. Apart from its information value this informal talks would enable the child to structure and represent ideas.

5. Quality of the language models available: This refers to the quality of language spoken at home by the family members, cause the child essentially learns the languages from the interaction patterns at home. Verbal communication refers to the words used the sentence patterns as also to the commands and requests made to each other, that is the tone of the interaction.

#### V. Academic aspirations and expectations:

The academic aspirations and expectations the parents have for their children go a long way in determining the educational environment provided. The home is usually the place where the child acquires the motivation to learn well and to aspire for higher educational qualifications. Parents or family members are the people who support the child at each stage, they are the ones who help them over in crisis and put before them the 'goals', which motivate them to overcome small little crisis and strive towards higher goals in education and personal development. Ways in which parents can motivate and help children to set their goals is by setting educational and vocational goals before the children.

1. Parental standards and expectations for the child's day to day school work: It is usually the parents who set the standards for the child's learning in and out of school. The process here refers to the standard set before the child in the quality of the school work in terms of neatness, cleanliness and mastery over the content taught.

2. Parental expectations and standard of child performance in tests and exams: Evaluation of the child's academic performance through periodical tests is a routine part of the school system. Parental expectations and the guidance they give in meeting these expectations does contribute significantly in enhancing the child's academic performance. A laissez faire attitude by the parents towards the child's academic achievement may probably demotivate the child.

3. Expectation of the child's performance in other school activities: Apart from the purely academic activities, other school activities like drawing, singing, games, etc., form a significant part of the school curriculum. These activities have their significant contribution to the child's all round development. Parental guidance and encouragement to the child in these matters help in building the child's confidence and personality.

4. Parental aspiration and expectation regarding the child's higher studies: The extent to which the parents want to educate their children to a large extent determines their attitude towards the child's education at present. If the aspirations are not very high the attention the parents give to the child's school work at present will also be of a lower quality.

5. Parental expectation and aspiration for the child's occupation: This refers to the crucial question asked by every parents to themselves, What profession should my child take up when he grows up? The parental attention given to the child's school work or the guidance and encouragement given to the child are to a certain extent influenced by the parental goal set up for their child. As such the parental aspirations for the child form an integral part of the Educational Environment of the home. It sets before the child and the parents a goal for which preparations have to be made right from the primary school level.

#### 4.1.4. Home Interaction Pattern (HIP)

In process of socializing the young child to the expected social norm, there occur many situations that require the parents to resort to different kinds of measures to bring about the desired behaviours in the child. The home is the social arena where on one hand there is the young child with her individual capacity, interests and pre-occupations and on the other hand the parents (or the adult family member) who too have their own individual capacities, interests, temperaments, frustrations, etc., these two are in a constant interaction with each other. The parents often attempt to alter the child behaviour to suit their notion of a 'good' child in these interactions. These interactions differ in homes in tune with the parental personalities and other varying factors like the number of family members at home, the type of family, the economic level of the family, etc., they also acquire a certain amount of stability over a given period of time, fluctuating within a given range only. There are a number of issues or areas in which these parent-child interactions occur; for the present study however four crucial aspects of the interactions were identified. These aspects were considered important essentially keeping in view the child's cognitive and psycho-social development. The four aspects were the autonomy given to the child, the type of disciplining used, the reinforcements given to the child and the sibling interactions. These are described in what follows:

1. The autonomy given: Both the cognitive as well as the affective theorists emphasize the importance of autonomy for the growing child. Autonomy to explore the environment, to try new tasks, and to explore social relationships are essential for the cognitive development as well as for personal confidence in self and the environment. Parents differ in the amount of autonomy they allow their child. There are parents who disallow any kind of explorations and freedom to the child, while there are parents who are at the other

extreme and are unconcerned as to what the child is doing. In between the the two possible extremes are the parents who fall somewhere in this broad range. Research evidences cited in chapter two show the effect that different parenting style has on the child. It is the middle approach of guiding the child when needed as well as allowing her the required amount of freedom that is found to be the most suitable with children.

2. The Disciplining used: Conflicts over a number of issues are a part of the parent-child relationship at home. In socializing the child to the required social norm there occur many conflicting situations, that could happen over routine matters of personal hygiene, meal times, school work, or on issues like dishonesty, aggressiveness or temper tantrums. Parental mode of disciplining the child differs; here the disciplining actions may range from harsh punitive measures for trivial reasons to an unconcern over even the severest of misbehaviour. Also there are parents who resort to cajoling, reasoning or withdrawing privileges, etc.; the way the parents discipline their child differs. The effects of the various disciplining measures on the child have been cited in chapter two. Here too, research evidences have favoured a moderate approach to be more suitable.

3. Encouragement and Reinforcements: Parental approval or disapproval has a significant place in the young child's life. Although closely associated with matters of disciplining, reinforcements cannot be synonymous with disciplining. Reinforcement is not something one utilizes in a situation of confrontation alone, it is also used to encourage good behaviour and even as a measure of eliciting positive behaviour. For example, when the child does well in her school encouragement or positive reinforcement plays an important role. Here too parents may vary in the kind of reinforcement they use.

4. Sibling Interaction: A fourth dimension on the home interactions considered significant was the type of sibling interactions that prevailed in the home. Siblings (or cousins in case of joint families) are important family members. The interaction with siblings differ from that with parents. Interactions with siblings are more on an equal basis, apart from being playmates with siblings the child learns to share things and experiences, the child learns to fight and reconcile, to love and to care. Admittedly, the sibling interactions too will have their negative dimension of jealousy, rivalry and competition. Either ways the type of sibling interaction is a significant aspect of the home interactions.

The Home Interaction Pattern Scale (HIPS):

The HIP Scale is very simple in its content and approach. The main purpose of the HIP Scale is to capture the essence of the parent-child and sibling interactions occurring at home. The administration of the scale would give an indication of the nature of the interaction patterns occurring at home, these patterns could well range on a negative to positive continuum. The HIP Scale is essentially to be administered through an interview, mainly because it is designed to get responses about the home interactions from uneducated to not so educated mothers. A great deal therefore depends on the rapport established between the interviewer and the respondent.

The Home Interaction Pattern Scale (HIPS) has four sub-dimensions they are: 1. the autonomy given by the parents; 2. the type of disciplining used; 3. the encouragement or reinforcement given; and 4. the sibling interactions. Under each dimension are five items, the scale thus has a total of 20 items. The 20 items comprise 20 hypothetical situations that are most likely to occur in the homes of the five to seven year olds. These 20 hypothetical situations pertain themselves to the four dimensions mentioned, five situations under each of the dimension. In administering the scale

the interviewer puts forth these hypothetical situations to the mother (or any other adult family member close to the child) and asks how the parents or the adults in the family would react if their child was to behave as described in the situation. The response could be rated on either of the following three levels: +1, -1 or 0. These ratings are based on evidences of previous researches wherein it has been found that both excessive punishments and threats as well as over indulgence on part of the parents are highly correlated to negative child behaviours. Therefore parental behaviours indicating either over-indulgence or excessive negative measures were given a negative marking (-1); whereas parental behaviours based on logical reasoning and firmness get a positive rating (+1). This rating too is based on the evidences of previous research which have indicated that reasoning accompanied by firmness and milder forms of punishment is correlated to positive child behaviour. Indifferdnce exhibited by the parents get a neutral rating. The scores for the 20 item scale are added up algebraically and the result score is arrived at as positive or negative as the case may be. With scoring pattern described, the range of the present scale could vary from -20 to +20.

The scale was then circulated amongst a panel of members consisting of educationists, child psychologists, graduated mothers of five to seven year olds and researchers in education for their comments. This was also to ensure the content validity of the tool. Suggestions from the panel members were incorporated in the tool. The tool was then tried out on a sample of ten families belonging to the lower middle class or middle class, and who had children belonging to the age group 5 to 7 years. Efficacy of the tool was seen in terms of one, the relevance of the 20 situations for the middle class and the lower middle class homes; two, the language used in putting forth the situations verbally to the mother; and three, in terms of the variety of alternative parent response received and their possible categorization on the three levels. This try out also

intended to find out the content validity of the scale. The try out revealed some flaws in the language structure, this was specifically evident while communicating the situations verbally to the mother. The language had many times to be re-worded in accordance with the individual mothers. In terms of the relevance of the situations to the social milieu and to the age group under study, there were no drawbacks identified. However a problem that hampered the scales administration was found to be the mothers' tendency to treat the twenty situations with irritation when the twenty situations were asked at a stretch. They invariably felt that the researcher was asking many trivial details and tended to be curt in their response. Hence, in light of this it was thought that for the best results the questioning on these items should be spread out over a span of a conversation. This could be done more effectively in the actual study where the present scale was one of the tools to be administered at home (The Educational Environment at Home Scale and The Social Competence Scale are the other two). As such, a comprehensive interview schedule was designed incorporating items from all the three scales. The interview schedule was made to sound as casual as possible and almost flowed like a conversation about the child, the twenty situations of the present scale were spread out at various relevant points. For example, while talking of the child's social competence or her daily routine the situations of the disciplining problems could very well be incorporated. This made elicitation of information far more natural; also the mothers did not feel obliged to give the answer which they presumed to be the most desirable one.

#### 4.1.5 Cognitive development (CD):

Two child attributes, the cognitive development and the social competence are taken as the child variables for the present study. Cognitive development is presumed to be a vital attribute which decides the child's perception and handling of tasks at

school. Piagetian point of view is taken to understand the child's cognitive development. An elaboration of this is given in chapter one. As stated there the first standard child is most likely to be towards the end of the pre-operational stage and is in the transition of graduating to the concrete operational stage. A concrete operational child thinks qualitatively different from the pre-operational child. A child at the concrete operational stage is able to perform the mental task of conservation and classification. Conservation refers to the awareness of invariance of material despite certain transformations. The ability to see beyond perceptual cues and to mentally reverse a given action. Classification refers to the ability to see more than one perceptual characteristics and to classify objects in classes keeping in mind the salient features. A conserver has also attained a certain amount of stability in thought. According to Piaget conservation can be exhibited with regard to a number of concepts, number, quantity, substance, weight and volume. Piaget has devised standard cognitive tasks to be performed which when used in a clinical interview situation can reveal the child's acquisition of the concept of reversibility and her ability to view things beyond the perceptual cues.

A number of investigations have been carried out by Piaget and associates as well as other investigators on conservation and classification. The tasks originally conceived by Piaget have been modified by investigators to suit their requirements of the sample and the milieu. The Piagetian tasks as done by the Child Study Unit of NCERT (1972-78) and those enumerated in Wadsworth (1971) and Good(1977) have been sources for devising the Piagetian Tasks. For the present study the children were tested on the following Piagetian concepts: 1. Conservation of Quantity, 1a. Conservation of liquid (one task), 1b. Conservation of solid (two tasks), 2. Conservation of length (two tasks), 3. Conservation of number (one task), 4. Seriation (one task), and 5. Discrimination (three tasks). In all there were ten tasks. The task description is at

tempted hereunder:

The children were tested individually through the clinical interview method. A basic format for conducting these interviews was constructed on the lines put forth by the NCERT survey, and that by Wadsworth (1971) and Good (1977). This format was essentially used as a guideline, cases which demanded more attention and elaboration were treated differently. The researcher adapted the mode of questioning suitable to the individual cases. The tasks entailed performing the transformations of the task in the full view of the child and obtaining responses and explanations before and after the transformations. The aim was to see if the child shows conceptual stability inspite of the perceptual variability. The answers were recorded immediately in a diary, with the description of the interaction between the child and the interviewer. In the following section the tasks as such are described; also given are the basic guidelines of conducting the tasks and points to be kept in mind while questioning the child on the transformations performed. The scoring scheme is also given alongwith. The format of the interview is put in appendix 3. As the interview was conducted in Gujarati, the format too is in Gujarati.

Task 1: Conservation of liquid

Material: Two long cylinders, one short wide tray, four small beakers and coloured water.

Procedure : Transformation 1: Equal amount of water from a jug is poured into the two tall cylinders. Transformation 2 : Water from one of the cylinders is poured in the short wide tray. Transformation 3 : Water from the tray is poured back into the cylinder. Transformation 4 : Water from one of the cylinders is poured in four small beakers.

Task 2: Conservation of Solids.

Materials : Clay or plasticine.

Procedure : Transformation 1: Divide the clay into two equal portions. Make two balls of the same size out of the two portions.  
Transformation 2 : Flatten up one ball into a pancake or a 'chapati'.

Task 3: Conservation of Solids.

Materials : Clay or plasticine.

Procedure : Transformation 1: Divide the clay into two equal portions. Make two balls of the same size out of the two portions.  
Transformation 2: Make 7 to 8 small balls out of one of the two balls.

Task 4: Conservation of length.

Material: Two wooden rods of 15 cms length and 1 cm thickness.

Procedure: Transformation 1: The two rods are placed parallel to each other. Transformation 2: One rod is pushed ahead by a 2 cms or so. Transformation 3: The rods are put back in the same position.  
Transformation 4: The two rods are placed in an 'L', 'V' and 'T' positions in turn.

Task 5 : Conservation of length.

Materials: One wooden rod of 15 cms length and 1 cm thickness and clay or plasticine.

Procedure: Transformation 1: Roll out a rod like structure of the plasticine, its size same as the wooden rod. Transformation 2: Place the wooden rod and the plasticine rod horizontal parallel to each other. Transformation 3 : Maintaining the same size curve the plasticine rod slightly.

Task 6 : Conservation of Number :

Materials : 10 red beads and 10 green beads.

Procedure : Transformation 1: Make a row out of the red beads.  
Transformation 2: Ask the child to make a similar, parallel row out of the green beads. Transformation 3: Spread out the green beads to

make a the row appear longer. Transformation 4: Make a pile of the green beads.

Task 7 : Seriation.

Materials : A set of nine slats. All the slats were of 1/2" in width and 1/4" in thickness. The slats were of increasing size, the smallest was 1 1/2" small and the succeeding slats increased in size by 1/2" increments.

Procedure: Transformation 1: The slats are all kept in a mixed up pile. Transformation 2: The child is asked if the slats are of the same size. The child is then asked to arrange the slats in an ascending order, beginning with the smallest slat.

Task 8 : Discrimination.

Materials: A set of 9 slats. All the slats were of 1/2" width and 1/4" thickness. The slats were of increasing size, the smallest was 1 1/2" small and the succeeding slats increased by 1/2" increment.

Procedure : Transformation 1: Arrange all the slats in a haphazard manner. Transformation 2 : Ask the child to pick up the smallest slat. Transformation 3 : Ask the child to pick up the biggest slat. Repeat the question again with the remaining slats.

Task 9 : Discrimination.

Materials : There are 16 cards consisting of people pieces, each of which has a figure depicting a person with certain characteristics. The characteristics being red, blue, skinny, and fat. Four girls (one red skinny, one red fat, one blue skinny and one blue fat), four boys, four women and four men in the same combination constitute the 16 cards. (They are given in appendix 2)

Procedure : Transformation 1 : Place all the 16 cards in front of the child. Transformation 2 : Arrange a family sequence of a red fat man, red fat woman, red fat boy but a skinny red girl. Transformation 3 : Ask the child what is wrong in the arrangement. Repeat the procedure with some other similar sequence.

Task : 10 : Classification.

Materials : Same 16 cards as mentioned in task 9.

Procedure : Place the 16 cards all mixed up before the child.

Transformation 1 : Ask the child to find the correct family members and to the right families.

The Clinical Interview to be conducted while testing the child on the present cognitive tasks followed the following sequence while asking the questions: 1. Ask prediction question. 2. Ask for explanation. 3. Carry out the transformation. 4. Ask judgement question. 5. Ask for explanation. While recording the exact responses were to be recorded alongwith the interviewer's observations and comments.

The scoring pattern:

The child whose response is entirely based on the visual cue, that is who says that the stick is longer because it's extreme point is jutting out, or who says the clay in the pancake is more because it is big, is assigned the score or stage denotion IA.

The child who shows uncertainty, or one who gives a correct response and then changes her mind. One who answers correctly for one position but not for the other is assigned the stage position IB.

The child who is not affected by the visual transformations and one who is certain of the consistency of the material inspite of the transformations is assigned the position II.

For classification, discrimination and seriation tasks a child who is unable to perform any of the tasks or does the task incorrectly is assigned the position IA.

A child who is hesitant, who does part of the task correctly or does correctly and then changes her response is assigned the position IB.

A child who attempts the tasks correctly and who is certain of her judgement is assigned the position II.

For the end score, the total number of IA, IB and II were counted. A child getting IA for all the ten tasks or IA for 6 tasks and IB for four tasks or 7 IA and 3 II would be assigned the score '1'. A child getting IB for all the ten tasks or more than 6 IBs, or a combination of say 2IA, 5IB, 3II in the sense a child exhibiting a great amount of fluctuations was assigned the score '2'. A child getting more than 6 II got a score of '3'. Score 1 denoted that the child was still at the pre-operational level of thinking and therefore based her response more on the apparent visual reality. Score 2 denoted that the child was in a state of transition, had doubts about the transformations observed, or had obtained the ability to conserve certain tasks but not all. Score 3 denoted that the child was now at the concrete operational stage and hence understood the rudiments of conservation and classification.

#### 4.1.6 Social Competence (SC):

Social Competence refers to the 'degree of competence' the child exhibits in dealing with the situations of everyday life, in her context or the social-environmental milieu. These situations could be wide ranging, tackling personal tasks, social transactions with peers and adults or even undertaking a task or an activity. The concept of social competence in the present study was largely based on the stage theory of Erikson's 'psycho-social' development. A detailed account of Erikson's theory in the context of the present study has already been presented in chapter 1. To recall briefly, the child for the present study approximately belongs to the age

group 5 to 7 years. According to the Eriksonian stages the child at this age is in the Initiative vs Guilt Stage or probably just graduated to the IV Stage of Industry vs Inferiority. The child who at this stage is in command of increased motor and language skills, as well as the increased knowledge of the world is more daring and investigating. She is full of curiosity and enthusiasm to master newer physical and social tasks, skills and assume newer responsibilities. The child also finds pleasure in planning and executing play, manipulating tool or toys. The stage is characterised by spontaneous initiating of activities, both physical and social. The Industry vs Inferiority Stage is characterized by the determination of the child to master the tasks before them, they learn by doing and experimenting with tools available to them. The focus is on mastery of age relevant skills.

The present concept and scale of Social Competence draws heavily from these stage descriptions, items are based on the stage descriptions put forth by Erikson. The items are the manifested behaviours of the stage descriptions, that too, behaviours as exhibited by a child at that stage in the lower middle class or the middle class urban Indian set up. The description of the first four Eriksonian has been done in chapter one. The emphasis in this section is essentially on the exercise that has gone into the present tool construction.

To begin with a review of the Eriksonian literature was done to understand the theory, and get a proper perspective. Next a paper on the Eriksonian theory was written and presented before a group of researchers consisting of psychologists and educationists. Discussion in the forum enabled the researcher to take a fresher look at the Eriksonian propositions. The presentation was followed by consultation with people working in this area. The discussions were then followed by preparing detailed descriptions of the first four Eriksonian stages : Trust vs Mistrust, Autonomy vs Shame and Doubt,

Initiative vs Guilt and Industry vs Inferiority. The descriptions were restricted in view of the age of the children in the sample under study, five to seven years. These descriptions highlighted the competencies, behavioural patterns and inner preoccupations put forth by Erikson. The descriptions were then followed by possible corresponding behavioural manifestations in the Indian lower middle class milieu. The original stage descriptions and the corresponding possible behavioural manifestations for the first four stages together formed a matrix. This matrix was circulated among research experts- educationists, child psychologists and statisticians. These experts were briefed on the purpose of the present tool and the age group for which it was to be used. The experts were requested to critically examine the correspondence between the theoretical descriptions and the possible manifestations of these descriptions in the Indian middle class milieu.

The experts suggested that the inclusion of all the four stages - from birth to school age, made the list of characteristics unwieldy and cumbersome. Also, in eliciting information of the first two stages spanning the infancy period one would have to rely on parental memory, which tends to distort information about child's infant behaviour. The experts also opined that Erikson views development as a stepwise progression, the success at each stage dependent on the successful resolution of the conflicts in the preceding stages. Therefore one could assume that the characteristics of the preceding stages have been more or less mastered; either way the present behaviour of the child will reflect her progress in the preceding stages as well. In view of this opinion, the list of characteristics was limited to the Stage III and IV.

Thus, the Social Competence here was generally to be taken as the initiative the child takes in different spheres of personal tasks, social interaction ~~with~~ peers and adults, and in play and work. Also it is the interest and perseverance with which the child

follows age suitable tasks of work and play. The revised list of characteristics was then tried out in field situation, the urban middle class homes, who had children belonging to the age group of five to seven years. Initially it was used both as an observation tool and as an interview schedule. Ten families were visited. Based on this try out and observations made, the scale was given its final form. The final Social Competence Scale comprised 32 items. The scale was once again circulated to a panel of experts, consisting of educationists, child psychologists, primary school teacher and graduate mothers. This was done to ensure the content validity of the scale. Suggested changes were duly incorporated.

The scoring: Each of the 32 items were to be graded on any of the three alternatives: a. The child never exhibited the characteristic. b. The child sometimes exhibited the characteristic. c. The child usually always exhibited the characteristic. The three alternatives were graded as follows : alternative a = 1 point; alternative b = 2 points and alternative c = 3 points.

Keeping in view the age group of the sample, the scale was essentially to be used as an interview schedule wherein the parents or any other adult family member close to the child could be interviewed.

Limitations: The scale essentially grades the day to day observable behaviour of the child, it is therefore to be taken as an approximate indicator of the child's Social Competence. Its perview does not extend to include special talents or abilities the child possesses. In case of extreme scores, or where need is felt, the present scale is to be supplemented by clinical interviews or case studies. A combination of the scale and clinical interviews would also be more on the Eriksonian line of thinking, where the importance is also given to the individual's inner psychological disposition.

#### 4.1.7. Adjustment to School (AS):

Most formal schools in the country operate in a set pattern. The usual pattern of events comprises teacher talk, which may be teaching, giving instructions, evaluating and maintaining the discipline in the classroom. Her tools in these operations are the blackboard, the text book, the chalk and the occasional chart and pictures. The corresponding and expected student activities usually are listening attentively to the teacher, answering her queries, writing down what is told and working on written and oral assignments. The subjects taught may vary during the day but the basic pattern of events remain the same. Things at primary level are no different, even in class one the same ritual is adhered to. The characteristic features of the typical Indian classrooms such as crowding together, small classrooms, long periods of concentration, uninteresting teaching styles make unusual demands on the child's adaptability. These features which are now the "implicit and essential parts of the educational process" and "to benefit fully from schooling the child must come to terms with most of them". Youngman (1979).

School adjustment then is the behavioural adaptation the child makes to the different components of the classroom. The present scale, an inventory, is based on a 34 item self reporting inventory developed by Youngman (1969). Youngman's inventory was essentially used to describe the "typical school behaviour"; items were thus framed to represent the typical school behaviour. The second criterion followed by Youngman while framing the items was that they be as objective as possible, so that it met the prerequisite set forth by Stott in measuring students' school behaviour that is the - "behaviour description be as independent as possible of the rater to the subject". (Stott et al., 1975). As such the items framed are unambiguous and unidimensional. Youngman's inventory presently under discussion was arrived at after administering

and factor analysing a 40 item inventory, with 274 twelve year olds and 288 thirteen year olds, with secondary school students as the sample. This factor analysis had yielded 3 subscales out of which the 34 items were arrived at. Thus, Youngman's 34 item inventory designed to measure the behavioural adjustment to school measured three specific dimensions; one - the studiousness, two - the compliance and three - the teacher contact. All the three sub-scales as well as the total score showed acceptable reliability and well defined construct validity within normal lower secondary population. The validity assessments supported using of the total inventory score as a general measure of behavioural adjustment to school. Youngman further suggested the idea of a teacher form for the scale so that the teacher can assess the childre's adjustment rather than rely on self report, a more appropriate procedure with younger children or poor readers.

Keeping in mind the present age group, and their entry to formal school routine, the dimensions included from Youngman's inventory were one, participation in classroom activities which came close to the construct of studiousness; two, compliance to school routine and regulations; and three contact with teachers and peers. The items were taken from Youngman's inventory discussed above. The inventory had 20 items; items logically thought to be not very relevant to the first standard children were eliminated after discussions with educationists, primary school teachers and child psychologists. The inventory was in a form of a teacher rating inventory. The items of the scale were divided as follows : a. the construct participation at school had 7 items. b. the construct compliance to school routine and regulations had 7 items and c. contact teachers and peers had 6 items.

The scoring scheme : A child behaviour in congruence to the classroom norm, or a behaviour positive in its approach to teacher or peers got a score of '1'. While a behaviour going against the

requirement of the classroom and negative in approach with peers and teachers got a score of '0'. The Behavioural Adjustment to School Inventory is attached in appendix 6.

#### 4.1.8 Academic Achievement (AA)

As stated earlier in chapter 3, Academic Achievement for the present study was to be understood as the child's performance with reference to the academic expectations of the school. The school milieu essentially measures the child's academic performance through the periodically conducted tests. These tests are teacher made tests, designed to evaluate the child's content mastery of the content taught in different subjects. The child at the first standard level had both oral and written tests.

The purpose of the present study was to study the child in transition, the class one child, as she adjusts to the more rigorous norms of the formal schooling and her academic achievement towards the first half of a class one session. As such the purpose was to understand this phenomenon as it occurs, including the phenomenon 'testing' as it was done in the school. Hence academic achievement was not an objective indicator of the child's scholastic abilities but it was an index of her performance in the school-supported and school-devised situations, the teacher made tests.

Children in the sample were tested for four subjects by the school Gujarati, English, Environmental Education and Arithmetic. The children were tested both through oral as well as written tests. There being a government rule of not detaining any children in a class, till they reached class seven, the school authorities had interpreted this as assigning a minimum of thirty-five percent marks to all children, even when they did not perform at all the teacher assigned them the minimum thirty percent marks. As such the score range for the academic achievement ranges from thirty-five to

hundred percent.

#### 4.2.0 Techniques of data collection

Before the actual data collection commenced a major step was to clarify the way one was to elicit the required information to answer the three research question put forth. A combination of structured, unstructured and clinical interviews coupled with observations were envisaged to be employed in attaining the required information.

##### 4.2.1 Structured Interviews :

The present sample belonging to the poorer sections of Vadodara city was essentially to be a Gujarati speaking community. Also, the level of parental education was an uncertain factor. In the given circumstances it was proposed that a home visit and interview sessions with a responsible adult member of the family, who was most in contact with the child and as such aware of all the details regarding her behaviour pattern and daily routine would be interviewed. The obvious choice for the interviewee thus was the mother of the child, although information volunteered by other members was also to be taken into account. The structured interview was essentially designed to acquire information to answer the first research question, which demanded a set of information under each variable of the causal model. For the variables Mother's Education, Educational Environment at Home, Home Interaction Pattern and Social Competence of the child at home, the mother was thought to be the main source from whom the required information was to be got. An interview schedule was developed in Gujarati, incorporating the tools for the variables mentioned. During the try out of the Educational Environment Scale, the Home Interaction Pattern Scale and the Social Competence Scale it was observed that a mere mechanical compilation

of the various tools, and asking the mother questions in the sequence of the various tools, made the mothers very conscious of the answers they gave. Mostly, the tendency was to supply what they thought to be the appropriate answer. Also the interview session seemed to drag on without the essential rapport between the interviewer and the interviewee being established. In view of these drawbacks an interview schedule, informally worded and beginning with the child and the mother's point of view was developed. This interview schedule began with questions on the child's daily and weekly routine followed by questions on the mother's and the child's interests and those of the other family members. Items of the different tools were incorporated in the interview schedule at suitable points so as to maintain the flow of the conversation. This made the interview schedule less officious in its tone and more relaxed.

#### 4.2.2. Unstructured Interviews:

This technique was essentially to be adopted for acquiring information to answer the second and third research questions, which called for an idiographic approach. This approach required comprehensive and descriptive information of a few cases. The unstructured interviews were supposed to pick up from where the structured interviews left off, for the selected cases. Building up on the rapport established during the structured interview sessions, further information was sought from the family members. For the unstructured interview the respondents would include, mother, father, grandparents, teacher, tuition teacher, peers or even the neighbours. In the unstructured interviews there were no preconceived hypotheses for which the information was to be elicited. The interview was to proceed from the cues got from the various respondents. The sole aim was to get as much information as possible from the different sources of that particular case. The unstructured interview therefore did not follow any particular format that but varied from case to case, as the need be. Anecdotal records were maintained for these

unstructured interviews, but for taking down a point or two no attempt was made to take down information during the actual interview sessions. The information was recalled and put on paper immediately after each of the unstructured interview sessions. The choice of using an audio tape recorder to record the interview and make transcriptions later was deliberately not made since it was thought introducing such a gadget will affect the spontaneity of the conversation.

#### 4.2.3. Clinical Interviews:

Wadsworth defines the clinical interview as an ongoing experimental process in which "the interviewer asks questions to a child, listens, observes, makes hypotheses about the child's conceptual ability and proceeds to ask more questions based on the hypothesis she has formed" (Wadsworth, 1978). The aim here is to probe into the underlying reasoning of the child in face of a given problem. The interviewer's task is to provide conflict situations, make counter suggestions and encourage the child to test predictions and verify answers. Her chief goal is to ascertain the nature and extent of an individual's knowledge about a particular domain by identifying the relevant conceptions he or she holds and the perceived relationship among these conceptions (Posner and William, 1982). The information obtained of the child's cognitive thinking could then be represented in the suitable format of the relevant stage.

For the clinical interview, rapport between the interviewer and the interviewee is of great importance. The interviewer has to be sensitive to ensure that the interviewee, the young child in this case has understood the problem set before her. This especially is difficult because of the language barrier, by putting forth the problem verbally and labeling the material, the interviewer may confuse the young child. To avoid this, it is thought desirable that

the interviewee is asked to describe the physical details of the task presented in her language and then use the same words for asking further questions during the clinical interview. Another caution which the interviewer is to exercise is in making judgements over the interviewee's responses. Piaget (1960) has classified the reactions of an individual, who is being clinically examined into five categories. They are : 1. answering at random with total disinterest on the posed problem ; 2. romancing: i.e. inventing an answer which he really does not believe; 3. suggested convictions: i.e., answers based on suggestions in the questions; 4. liberated convictions: i.e. answers which come out of the mind as though it is getting liberated; and 5. spontaneous convictions: i.e. answering from a previous original reflection.

Among the five types of responses, the first three do not help the interviewer much in understanding the cognitive structure of the child. The last two are best suited and the "liberated conviction " is the best between the two, in understanding the interviewee's cognitive structures. An interviewer has to be extremely cautious and sensitive in order to properly understand the responses. The interviewer has to keep in mind the whole context before assigning the judgement response. The advantage of this technique is that during the presentation of a problem it can be ensured by the interviewer that it has been conceived properly. Also, wherever clarifications are needed on the interviewee's reaction they can be sought immediately by the interviewer. This would enable the interviewer in making valid judgements on the reactions of the interviewee. The disadvantage is that it is time consuming and tedious.

#### 4.2.4 Observation:

Observation as a technique becomes essential in acquiring two set of information, one in observing the home environment and the

home processes in building up the case studies. As such objective and pertinent observations were to be recorded during the home visits. Secondly, observation as a technique becomes necessary in recording the classroom procedures. This entailed objective observation of the different aspects of classroom like the teacher behaviour, teacher-pupil interaction, child behaviour, the evaluation procedures, etc. This information was not to be put through the rigours of quantification, but was essential in building the backdrop and identifying the processes in the first standard child's social-environmental milieu, it was thought that a qualitative accounting of the goings on of the classroom would be recorded. Anecdotal records of specific incidents would be maintained.

#### 4.3.0 The Procedural Details

The tools were ready by April 1984. All the tools except the Piagetian tasks were tried out on ten families of middle and lower middle class milieu having children of about five to seven year olds. On the basis of the observations made in this try out changes were made in the tools concerned. The changes essentially pertained to the language in putting forth the items of the three tools, The Educational Environment at Home Scale (EEHS), The Home Interaction Pattern Scale (HIPS) and the Social Competence Scale. A comprehensive interview schedule was developed incorporating the items of all the three tools. The actual data collection began in June 1984 and continued till mid January 1985.

##### 4.3.1: Data Collection from School :

From school the following data were collected: the list of the children, their background information, the observation of the classroom procedures, the school adjustment scores and the academic

achievement scores. The list of children and their background information (parental occupation, address, etc.) was got from the school records. This was done in the second week of of June. In the chronology of data collection it was planned that first the testing of the children for the cognitive tasks would be made. As per this schedule, towards the last week of June 1984 the cognitive testing began. Ideally for the testing on the cognitive tasks a separate room with only the interviewer and the interviewee present is recommended. However in the present school there were a few problems regarding this. The school authorities were unable to provide this facility. They could only provide two small tables, two small chairs and a small screen that screened the child but not the interviewer. The clinical interviews for the Piagetian tasks were thus conducted in one corner of the classroom using two chairs, two tables and the small screen. This however had one advantage, the children lost their awe of the interviewer and the experiment, and therefore, establishing the rapport became easier. Another advantage was that the researcher unwittingly had to observe the classroom interactions daily, thus deriving valuable insights into the classroom processes. These observations were later made more systematic. That is, during the cognitive testing, which lasted almost two months, the researcher would observe the classroom interactions for two half an hour durations, alternating the timings everyday. These running observations made were maintained in a dairy of anecdotal records. The observations tried to include the goings on in the classroom during that period. The data thus collected were then utilized in the chapter 6 where qualitative data is presented. These observations also aided the identification of cases for the case studies. For the cognitive testing six to eight children could be tested per day for a single cognitive task. The testing on the Piagetian tasks lasted for two months and a week or so more. That is, towards 1984 August end the testing for the Piagetian tasks for all the fifty-six children was complete.

Towards the end of October, it was time for the periodical school tests, almost five months since the class one session had begun. The scoring for the children's Behavioural Adjustment to School was also done during this time. The teacher expressed her inability to fill in the 56 forms of the Behavioural Adjustment Inventory as she was too loaded with school work. Therefore, the researcher made four matrices with 14 children in each matrix, and spent two hours four sessions scoring the Behavioural Adjustment Scores jointly with the teacher at the teacher's home on Sundays. The teacher was thus able to give her opinion on all the 56 children.

The researcher also observed the school tests being conducted; records of this were also made. Both the oral and the written tests were observed. The scores on the tests conducted were collected from the teacher in November. The children were tested for Gujarati, Arithmetic, Environmental Education and English. Lastly teacher's opinion on the six selected case studies was also sought.

#### 4.3.2. The Home Visits :

In August 1984 itself, the home visits were commenced. Two visits per home were essential in getting the information for the Educational Environment, the Home Interaction Pattern and Social Competence. A preliminary visit was always warranted essentially for locating the house in the maze of lanes and by-lanes, and fixing time for interview with the members of the family. During the subsequent home visit, the mothers were interviewed on the comprehensive interview schedule. The interview mostly lasted about two and a half hours. Though the effort always was to complete more than one household in a day, this was not often possible, since many times, mothers would be free only during the afternoons and in a single afternoon, to attempt visiting more than one household was extremely difficult. Moreover, every now and then the mothers were distracted

by the household responsibilities, and then there would be the usual cup of tea for the researcher, which one could hardly refuse. This way, the interview session would stretch well over two and a half hours. Thus, by the time data from all the fifty-six households were collected, it was almost the end of October 1984.

November and part of December 1984 were spent in collecting data from the homes of the six cases selected for intensive study. As comprehensive information was essential here, talking to the other members of the families were also necessary. Attempts were also made to meet the neighbours and tuition teachers wherever necessary for these six cases. Additional two to three visits were made to each of the six houses, to get the relevant information.

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