Chapter 3

METHODOLOGY

The present chapter discusses in detail the methodology of the study which includes design of the study, sample for data collection and the sampling procedure used, description of the research tools and techniques of data collection, and procedure adopted for developing and pretesting the tools. The chapter also elaborates on the organisation of data collection, administration of the treatment i.e. the Value Discussion Model and the scheme of analysis for quantitative and qualitative data.

3.1 DESIGN OF THE STUDY

A Quasi-experimental approach with pretest - posttest non-equivalent group design was adopted for the study. As explained by Tuckman (1972) "Quasi-experimental designs exist for situations in which complete experimental control is difficult or impossible". School systems often may not allow intact classes to be disrupted or divided to provide for random or equivalent samples and there are limitations in manipulating conditions. Quasi-experimental designs carry experimental control to its reasonable limit within the realities of a particular situation.

The pretest - posttest nonequivalent group design suggested by Campbell and Stanley (1963) is symbolised as :

O_1 x O_2 where O_1, O_3 = Pretests x = treatment
O_3 c O_4 O_2, O_4 = Posttests c = control

The study was conducted with two groups of students - one designated as the experimental group and the other as the control group. The groups were taken as they existed and were assigned the treatment randomly.

3.2 SAMPLE AND SAMPLING PROCEDURE

The study focussed on adolescents and the effect of Value Discussion as treatment was to be evaluated with reference to adolescents. The content of the treatment was found more appropriate for students in the age group of 15 to 17 years. Students in the Standards 10, 11 and 12 normally fall under this age group. Students of Standard 10 and 12 have to appear for the State Board examinations, the results of which are crucial from the point of view of further studies. Hence the students of Standards 10 and 12 as well as the school authorities were reluctant about their participation in the study. Similarly, there was also reluctance in allowing students from the Science stream to participate because of more weightage given to academic achievement and timely completion of the syllabus.

Students of Standard 11 and belonging to the General stream were, therefore, selected as the population for the study.

Two classes of Standard 11 of General stream were selected for the study from two schools of Vadodara. The two schools were matched on important characteristics to

ensure that the students in control group and experimental group belonged to a comparable socio-academic milieu. Both the schools had Gujarati as the medium of instruction and followed the same curriculum and text-books. Both were co-educational and catered to students with comparable socio-economic background and academic achievement. The schools were situated in two different geographic areas at a considerable distance from each other, reducing the chances of contamination between the control group and the experimental group.

In random assignment of treatment, one school was designated as the experimental school while the other was treated as the control group, taking the groups of students in Standard 11, General stream, as they existed.

3.2.1 Description of the Sample

The total sample for the study was 145 adolescents studying in Standard 11 of General stream. The number of students in the Control group was 79 and that in the Experimental group 66.

Tables 3.1 and 3.2 summarise the characteristics of the Control and Experimental groups respectively on the basis of the independent variables selected for the study, namely, sex of the subject, education of mother, education of father, profession of mother, profession of father, and type of family.

Table 3.1

Description of the Control Group : Sample Size 79

	Male 40 (50.6%)	Female 39 (49.4%)	Total 79* (100%)
Mother's Education			
0 - Std. 7 ...	11 (13.9%)	09 (11.4%)	20 (25.3%)
Std.8 - SSC ...	20 (25.3%)	24 (30.4%)	44 (55.7%)
Diploma/Graduate..	04 (05.1%)	04 (05.1%)	08 (10.1%)
Post-Graduate/ Professional degree ...	01 (01.3%)	01 (01.3%)	02 (02.5%)
Father's Education			
0 - Std. 7 ...	07 (08.9%)	03 (03.8%)	10 (12.7%)
Std.8 - SSC ...	10 (12.7%)	17 (21.5%)	27 (34.2%)
Diploma/Graduate..	12 (15.2%)	13 (16.5%)	25 (31.6%)
Post-Graduate/ Professional degree ...	06 (07.6%)	05 (06.3%)	11 (13.9%)
Mother's Profession			
Self-employed ...	03 (03.8%)	01 (01.3%)	04 (05.1%)
Service ...	03 (03.8%)	06 (07.6%)	09 (11.4%)
Housewife ...	31 (39.2%)	31 (39.2%)	62 (78.5%)
Father's Profession			
Labour ...	01 (01.3%)	02 (02.5%)	03 (03.8%)
Farming, business, trading etc. ...	13 (16.5%)	08 (10.1%)	21 (26.6%)
White-collar job..	17 (21.5%)	23 (29.1%)	40 (50.6%)
Professional ...	03 (03.8%)	04 (05.1%)	07 (08.9%)
Type of Family			
Joint ...	07 (09.9%)	07 (09.9%)	14 (17.7%)
Nuclear ...	31 (39.2%)	31 (39.2%)	62 (78.5%)

* The grand total (%wise) for each variable may not come to 100% as some subjects may not have given information on that variable.

Table 3.2

Description of the Experimental Group : Sample Size 66

	Male 29 (43.9%)	Female 37 (56.1%)	Total 66* (100%)
Mother's Education			
0 - Std. 7 ...	04 (06.1%)	05 (07.8%)	09 (13.6%)
Std.8 - SSC ...	17 (25.8%)	25 (37.9%)	42 (63.6%)
Diploma/Graduate..	03 (04.5%)	05 (07.6%)	08 (12.1%)
Post-Graduate/ Professional degree ...	01 (01.5%)	00 (00.0%)	01 (01.5%)
Father's Education			
0 - Std. 7 ...	01 (01.5%)	01 (01.5%)	02 (03.0%)
Std.8 - SSC ...	11 (16.7%)	16 (24.2%)	27 (40.9%)
Diploma/Graduate..	11 (16.7%)	11 (16.7%)	22 (33.3%)
Post-Graduate/ Professional degree ...	02 (03.0%)	07 (10.6%)	09 (13.6%)
Mother's Profession			
Self-employed ...	03 (04.5%)	01 (01.5%)	04 (06.1%)
Service ...	00 (00.0%)	01 (01.5%)	01 (01.5%)
Housewife ...	24 (36.4%)	33 (50.0%)	57 (86.4%)
Father's Profession			
Labour ...	01 (01.5%)	05 (07.8%)	06 (09.1%)
Farming, business, trading etc. ...	12 (18.2%)	11 (16.7%)	23 (34.8%)
White-collar job..	08 (12.1%)	14 (21.2%)	22 (33.3%)
Professional ...	04 (06.1%)	05 (07.6%)	09 (13.6%)
Type of Family			
Joint ...	11 (16.7%)	11 (16.7%)	22 (33.3%)
Nuclear ...	16 (24.2%)	24 (36.4%)	40 (60.6%)

* The grand total (%wise) for each variable may not come to 100% as some subjects may not have given information on that variable.

The Control Group

Table 3.1 shows that the proportions of male and female students were almost equal in the Control group. Only 10.1% of students had mothers having a diploma or graduation level of education and only 2.5% of students had mothers with a post-graduate or professional degree. 55.7% of students formed the majority with their mothers having completed high school education. With respect to father's education a majority of students fell in the middle two categories - High school (34.2%) and Diploma/Graduation (31.6%). There was, again, almost equal proportion of students falling in the two extreme categories: 12.7% (0 to Std.7) and 13.6% (Post-graduate or Professional degree).

An overwhelming majority of students (78.5%) had mothers who were housewives, whereas 16.5% of students had mothers either self-employed or in service.

With respect to father's profession, almost 50% of students had fathers in white-collar jobs. The remaining were divided between farming, business or trading (26.6%), professionals (8.9%) and labour (3.8%).

The proportion of students belonging to nuclear families was much greater (78.5%) than those belonging to joint families (17.7%).

The Experimental Group

The Experimental group differed slightly in sex-wise composition from the Control group. The percentage of female students was higher (56.1%) than that of male students (43.9%).

Majority of students (63.6%) had mothers with high school education. Only 12.1% had mothers having a diploma or graduation level of education while only 1.5% of students had mothers with a post-graduate or professional degree. With respect to mother's education the composition of the two groups shows a similar pattern. The Experimental group, however, has a smaller proportion of students (13.6%) having mothers whose education ended before reaching high school, compared to the Control group (25.3%).

A similar pattern is also observed in the two groups with respect to father's education. In the Experimental group 40.9% of students had fathers who had completed high school education and 33.3% of students had fathers with a diploma or graduate degree. 13.6% of students had fathers with a post-graduate or professional degree. But again the proportion of students having fathers whose education ended before reaching high school is smaller in the Experimental group (3.0%) compared to the Control group (12.7%).

In the Experimental group too, an overwhelming majority (86.4%) of students had mothers who were housewives

while only 7.6% of students had mothers either self-employed or in service.

In the Experimental group a large majority of students were almost equally divided between the middle two categories with respect to father's profession. 34.8% of students had fathers in farming, business or trading, while 33.3% of students had fathers in white-collar jobs. Those students having fathers in the categories of labour (9.1%) and professionals (13.6%) were slightly higher in proportion compared to the Control group.

The Experimental group also had a majority of students (60.6%) belonging to nuclear families. The proportion of students (33.3%) belonging to joint families was, however, higher compared to the Control group (17.7%).

3.3 DATA REQUIRED FOR THE STUDY

The study aimed at evaluating the effect of Value Discussion Model on adolescents in terms of change in the following dependent variables : (i) attitude towards gender equality, (ii) gender stereotypes, (iii) value judgement and (iv) value clarification. Pretest and posttest scores of both the experimental and the control groups were required for the study.

The independent variables included in the study were sex of the subject, education of mother and father, professions of mother and father, and type of family.

Data regarding these variables were also required from each individual.

Mere quantitative data and statistical analysis could not reveal the subtle aspects of change in the adolescents. Besides, the treatment was spread over a span of four months and hence focussing only on pre- and post-scores would ignore happenings between the two points. Considering these points qualitative data in form of day-to-day observations and content of student discussion were included in the study.

3.4 TOOLS OF MEASUREMENT

3.4.1 Description of the Research Tools

The following tools developed by the investigator were used for collection of data for the study. The same versions of the tools were used for the pretests and the posttests in both, the control as well the experimental groups. (Appendices 1 to 4 show actual samples of the tools.)

(i) Self-Administered Questionnaire

A short self-administered questionnaire entitled 'Background Information' was used to collect information about the independent variables. It required the participants to fill in appropriate information in a few words about their sex, education of mother and father, profession of mother and father, and type of family. Though

there was a space for writing name, students were given freedom of not writing the name. (Appendix 1)

(ii) Attitude Scale

A Likert-type attitude scale was used to assess attitude towards gender equality. The scale had 26 attitude statements; 10 positive and 16 negative. Against each statement were given five response categories - "strongly agree, agree, undecided, disagree and strongly disagree". Following the Likert method of summated ratings, each response was given a weight in the range of 0 to 4 and a total score for each student was obtained by summating scores for all the individual items (Likert, 1932). The maximum score on the scale was 104, and the minimum score was 0. (Appendix 2)

(iii) Gender Stereotype Tests

To assess gender stereotyping, 'professions' was selected as the dimension.

The profession test was a check-list of 50 professions with three response categories against each item : (a) the profession is appropriate for men, (b) the profession is appropriate for women, (c) the profession is appropriate for both. Additionally, participants were required to give reasons in brief if they believed that a particular profession was not appropriate either for men or women. The maximum score on the test was 50 and the minimum score was 0. (Appendix 3)

(iv) Value Test

A common tool was used to evaluate the change in value judgement and value clarification of participants with reference to gender equality. The test comprised of twelve situations derived from experiences of adolescents in their day-to-day life. Under each situation four alternatives were given to participants from which they had to choose one. This part of the test gave a quantitative score (ranging from 1 to 3) to each value judgement showing 'to what extent the participant valued gender equality'. The maximum score on the test was 36 and the minimum score was 12.

The second part of the test required students to give reasons for their choice of a particular alternative which were analysed qualitatively to assess the level of normative arguments. (Appendix 4)

All the tools were prepared in Gujarati language as the medium of instruction for the control group and the experimental group was Gujarati, and the investigator has good command over the language. (Details in Section 3.6.3 and Appendix 5 for the Gujarati version)

3.4.2 Methods to Record Qualitative Data

(i) Detailed notes on Dilemma Sessions

The investigator maintained a detailed step-by-step record of each dilemma and discussion session which included the theme of dilemma, date, time and mode of presentation,

alternatives put before participants, the pre-discussion response of students and formation of small groups on the basis of their choice, arguments presented by each group in support of their choice, the discussion that followed, probe-questions by the investigator and the discussion generated by probe-questions, and the post-discussion response by the students. (Appendix 6)

(ii) Record of Observations

From the day of the first visit to the schools to the end, a record of observations was maintained by the investigator. It included recording of students behaviour (whatever the investigator found striking or interesting from her subjective angle) before, during and after the dilemma session; informal chats among students and with investigator during the break; teachers' comments; and also the overall atmosphere of the school.

(iii) Written Summary of Arguments Presented by Participants

After presentation of each dilemma and posing of the alternatives by the investigator, the participants indicated their choice by putting the serial number of the chosen alternative on a slip of paper and passing it to the investigator. These slips helped decide the number of participants in favour of each alternative.

Small discussion groups were formed on the basis of the choice. Each group discussed among themselves, and before presenting their arguments to the class, wrote them

down. The investigator collected these papers at the end of every session. They gave an idea of students' feelings about the issue in their own words.

After the discussion students voted again (this was voluntary) and the slips with the serial number of alternative chosen helped decide the post-discussion response of participants. (Appendix 7)

3.4.3 Construction of Tools

All the tools used for data collection were developed by the investigator as no appropriate standardised tools focussing on the same content and population were available. Two versions of each tool were prepared - an English version was prepared for some of the experts who did not know Gujarati and for later inclusion in the dissertation document, while the Gujarati version was used for data collection.

The investigator followed a step-by-step approach for constructing the tools. The process began with reviewing theoretical literature on constructs to be measured viz. attitudes, stereotypes and values. Literature on construction of attitude scales, check-lists and various other types of tools was also referred and later examples of similar tools were reviewed from research reports. Expert evaluation and field testing were carried out before preparing the final versions of the tools.

(i) Construction of Attitude Scale

Thurstone (1946) defined an attitude as the degree of positive or negative affect associated with some psychological object. By a psychological object Thurstone means any symbol, phrase, slogan, person, institution, ideal or idea toward which people can differ with respect to positive or negative affect.

The concept of attitude is a broad one. Attitude theorists have proposed that there are separable components of the attitude concept. These components are classified as Cognitive, Affective and Conative. The cognitive component of an attitude includes the beliefs, the perceptions and the information one has about the attitude object. It is fact-oriented but it can not be separated from evaluation. The affective component of an attitude refers to the emotional feelings about or the liking or disliking of the attitude object. The conative component refers to one's policy orientation toward the attitude object or one's stance about the way in which persons (or attitude objects) should be treated in specific social contexts (Wrightsman, 1977).

Edwards (1969) has summarised the suggestions given by Wang, Thurstone and Chave, Likert, Bird, and Edwards and Kilpatrick for construction of attitude scales. With the help of these guidelines a Likert-type attitude-scale was constructed by the investigator to assess the change in attitude towards gender equality due to the treatment.

Attitude statements were prepared based on various dimensions of gender equality e.g. personal consequences for men and women, social and national consequences, desirability, and support to the movement for equality. Statements were selected in such a way that cognitive, affective and conative components were represented with reference to attitude towards gender equality. These statements were edited using the criteria suggested by Edwards (1969).

35 statements were included in the first draft of the attitude scale. These items were scrutinised by the evaluation experts to ensure that each item was an 'attitude statement' (i.e. people can differ on it with respect to positive or negative affect). The items were also passed by experts on gender studies as reflecting an aspect related to gender equality.

Item Analysis

Item analysis using statistical method was done for the attitude scale on a sample of 90 adolescent boys and girls. As suggested by Edwards (1969) the frequency distribution of scores was considered, based upon the responses to all the statements. 25 subjects with the highest scores and 25 subjects with the lowest scores were then identified and t-test was applied for evaluating the response of the high and low groups to the individual statements. The value of 't' gave the measure of the extent

to which a given statement differentiated between the high and low groups.

$$t = \frac{X_H - X_L}{\sqrt{\frac{S_H^2}{n_H} + \frac{S_L^2}{n_L}}}$$

where $\bar{X}_H$ = the mean score on a given statement for the high group

$\bar{X}_L$ = the mean score on a given statement for the low group

S_H^2 = the variance of the distribution of responses of high group to the statement

S_L^2 = the variance of the distribution of responses of low group to the statement

n_H = the number of subjects in the high group

n_L = the number of subjects in the low group

Statements having a 't' value greater than 1.75 showed significant difference between the two groups and hence were retained in the final draft. Out of 35 statements subjected to item analysis, 26 statements (10 positive, 16 negative) were included in the second draft of the attitude scale which was to be fieldtested before the experiment.

Scoring Procedure

Against each attitude statement in the scale were given five response categories - strongly agree, agree, undecided, disagree, strongly disagree.

The scoring for individual statements was carried out as follows :

Response Category	Positive Statement	Negative Statement
Strongly agree	4	0
Agree	3	1
Undecided	2	2
Disagree	1	3
Strongly disagree	0	4

A total score (out of maximum 104) was obtained for each participant by summating scores for all the individual items.

(ii) Construction of Gender Stereotype Test

The Chambers Twentieth Century Dictionary (Chambers, 1972) defines *stereotype* as 'a fixed conventionalised representation'. Wrightsman (1977) has defined *stereotype* as a relatively rigid and oversimplified conception of a group of people, in which all individuals in the group are labeled with the so-called group characteristics. Gender stereotypes are stereotypes associated with being a man or a woman. Gender stereotypes encompass a whole range of aspects like looks, personality, behaviour, choice of profession, qualities, social roles, duties, expectations, life-style and life-goals. Reporting on several researches focussing on gender stereotypes Wrightsman (1977) summarises, "At least two points are clear from the research

on sex-role stereotypes : first, the stereotypes are pervasive and exist among a wide variety of populations - clinicians, college students, older adults and children. Second, these stereotypes are held by men and women alike, suggesting that they are a cultural rather than a male chauvinist phenomenon".

Professions were selected as the dimension for the test because they fall in the perview of immediate observations and experiences of the adolescents.

A person's profession plays an important role in determining his or her social status. Apart from demanding same pay for same work and equal opportunity for promotion, advocates of equality argue that both women and men should be given the opportunity to pursue any of the jobs that society has to offer. In reality, however, people label certain jobs as 'male jobs' and certain others as 'female jobs'. Sometimes these labels are based on social observations. For example, one has seen very few male pre-school teachers or female pilots. At times, some jobs are seen as the 'natural' extension of women's traditional roles (for example, job of a baby sitter), and hence are labeled as female jobs. People apply several other criteria like physical strength, the type of skill required, work hours, the job-related need to travel or stay away from home, pay and prestige associated with the job based on their unconscious assumptions about gender roles, in labeling jobs as 'male' or 'female'. Rapid development in contraception

and modern technology has, however, brought a tremendous change in the work arena. Educated women now spend very few years in child bearing and new technology has opened many jobs to women, jobs which earlier required physical strength. And yet, gender stereotyping in profession is very much alive.

For constructing the profession test to assess stereotyping among participants, a list of seventy different professions was compiled. The list included a wide range including conventionally male and conventionally female professions, professions with higher and lower social respectability and different levels of income.

The list was then given to five adolescents of Standard 11 from a school which catered to students of comparable socio-economic and academic achievement levels. These adolescents studied the list and marked the professions which were totally unfamiliar to them. Ten such professions were then taken out from the test. A list of remaining sixty professions was then given for scrutiny to three experts who had worked in the area of evaluation, gender studies and vocational guidance. These experts had to finalise the list of professions considered conventionally male or conventionally female, but which could actually be taken up by both, men and women. The experts also advised to include a few professions which were more or less considered androgynous.

A final list of 50 professions was drawn up which reflected a wide spectrum of skills, income and respectability levels and fields.

Scoring Procedure

Against each profession spaces were specified for marking the response:

Profession	Appropriate for Men	Appropriate for Women	Reason

If the respondent felt that the profession was appropriate for both, men and women, he or she had to mark in both the boxes. Each respondent was given three scores : M, F and T where the 'M' score indicated the number of professions designated as 'appropriate only for men', the 'F' score indicated the number of professions designated as 'appropriate only for women' and the 'T' score indicated the number of professions designated as 'appropriate for men and women' - higher the 'T' score, lower the level of gender stereotyping with respect to professions. The maximum possible 'T' score was 50.

The respondents were asked to give a reason when they marked a profession appropriate only for men or only for women. These reasons were coded in eight different categories (please refer to Section 4.3, Chapter 4 - Analysis of Data - for details).

(iii) Construction of Value Test

A common tool was constructed to assess the change in value judgement and value clarification with reference to gender equality.

According to Shaver and Strong (1976), Value Judgements are the assertions we make on the basis of our values. In order to make a Value Judgement one considers all facts in a situation, thinks of possible consequences of each alternative, and on the basis of some criteria developed by the individual, decides which alternative action one would take. The criteria indicate what one prizes most and what one values (Das, 1987). According to Rowntree (1981) Value Judgement is a person's subjective appraisal of quality or worth of someone or something based on his own value system or that of his peers. According to Hersh (1980), Value Judging requires the ability to evaluate conflicting interests in the light of a consistent criterion or principle.

Review of literature on Value Clarification indicates wide acceptance of Rath (1966)'s concept of value clarification wherein seven valuing processes are given as components of value clarification. They are (i) choosing freely, (ii) choosing from alternatives, (iii) choosing after considering the consequences, (iv) prizing and cherishing, (v) publicly affirming, (vi) acting upon choices and (vii) repeating.

For constructing the value test, situations from day-to-day life of adolescents were developed which required the respondents to give a value judgement based on their value of gender equality. Each situation included one or more of the value clarification processes proposed by Rath (1966). Under each situation four alternatives were given. The first three alternatives showed different levels of valuing gender equality while the fourth was an open ended alternative allowing students to advance an option other than the three given options. Respondents had to choose one of the alternatives.

After developing sixteen such situations and writing the first draft of the test, it was given to a panel of five experts and three school teachers to scrutinise the situations and alternatives given. Three experts and all the teachers suggested that since the test also required the respondents to give reasons for their choice, sixteen situations would be too many for the students to attempt. It was hence decided to cut down the number of situations to twelve. The situations involved personal action, interpersonal or public advocacy, protesting against bias in family, school or in public, or open acceptance of one's value for gender equality.

The second part of the response required respondents to give reasons for their choice of a particular alternative. According to Facione, Scherer and Attig

(1978), an important step towards understanding what people mean by their normative claims is to ask for reasons why we should accept their normative views.

Facione et al. (1978) have also suggested a procedure for assessing normative arguments, which focuses upon distinguishing between 'justifications' and 'pseudo-justifications'. "Justifications are reasons that would persuade unbiased, informed, rational people that our normative positions are, beyond any reasonable doubt, correct".

By analysing the reasons given for supporting the value judgement one can distinguish pseudo-justifications based on the following criteria :

i) Giving one's motivations is not justification. "I would do it because I enjoy it", or "I would not choose it because it scares me". These are personal motivations which should not be confused with justification.

ii) Appeals to emotion aimed at directly bringing about action do not constitute justification.

iii) Rationalisation is not justification. To rationalise is to choose first and look for the reason later.

iv) Excuses are not justifications.

v) Citation of facts about the sources of the views that are being defended is not equivalent to citation of reasons. For example, endorsement of parents, scripture, authority, custom or public opinion is not a sufficient basis for justification.

If facts provided in support are false, irrelevant or inconclusive, then they fail to be basis for justification.

For assessment of the level of normative arguments Piaget's stages of distributive justice also give some guidelines. At Stage-1 the subjects consider that whatever the authority says is the law. At Stage-2 designated as egalitarianism rigid equality is proposed whatever the situation, whereas at Stage-3 called equity, equality is always defined taking into account the way each individual is situated (Wrightsman, 1977).

The qualitative analysis of the reasons given in the twelve situations on the value test has been done in light of the theoretical basis of value clarification discussed above.

3.4.4 Establishing Validity and Reliability of the Tools

The validity of a test, or of any measuring tool, depends upon the fidelity with which it measures what it purports to measure. Validity is a relative term. A test is valid for a particular purpose or in a particular

situation - it is not *generally* valid (Garrett and Woodsworth, 1961). The content validity involves essentially a systematic examination of test content to determine whether it covers a representative sample of the behaviour to be measured.

Content validity of all the four tools was established by submitting them to a thorough scrutiny by a panel of five experts. The experts belonged to the fields of Education and Psychology, Gender Studies, and Human Development and Family Studies.

In addition, five school teachers normally teaching in the Class 11 were asked to evaluate the tests for clarity of language and meaning; and structure of the test with respect to ease of answering.

The scoring procedure for all the four tools were also approved by three experts in evaluation and measurement.

According to Garrett and Woodsworth (1961) a test score is called reliable when we have reasons for believing the score to be stable and trustworthy. Reliability of tools was determined through test-retest method. The test-retest reliability refers to consistency of scores obtained by the same individual when reexamined with the same test on a different occasion. The test-retest procedure was carried out in the class of Standard 11 of Navyug School. The

common sample size for the test and the retest was 80 boys and girls and the time-gap between the test and the retest was of 30 days. The correlation coefficient was worked out on the basis of the scores obtained by 80 students on the test and the retest. The correlation coefficient was found to be 0.79 for the attitude scale and 0.77 for the gender stereotype test.

3.4.5 Field-Testing of Tools

All the tools were field tested in April 1993 in the same school which later was to become the experimental school. A sample size of 90 boys and girls was selected at random from two classes of Standard 11. The actual experiment was scheduled to begin in the next academic term (in July-August 1993). At that time the students on whom field testing was done moved to Standard 12 which was not part of the experiment. This reduced their chances of reappearing on the same test to a minimum. (Only a student failing in Standard 11 in the examination of May 1993 had a chance of reappearance but none of the students in the sample failed.)

Besides giving response to the items in the test, the respondents had to underline words and statements difficult to understand; state whether the instructions were clear and format convenient to respond, and opine whether attempting the test was interesting or boring.

For each test, the time taken for the first student and the last student to complete the test were also noted to see if the tests could be completed by a majority of students in a reasonable time. Students were also asked to comment freely on whether they would like to participate in such a program.

After field-testing the following modifications were made : mother's and father's education were added as variables, clear-cut boxes were introduced as space for marking responses, difficult words were deleted, changed or explained using brackets, and certain instructions were made clear. Students' comments showed that they treated the program as useful and a welcome change in which they could freely discuss their ideas.

3.5 ORGANISATION OF DATA COLLECTION

The data collection was organised in the following phases: conducting the pretests, administering the treatment and conducting the posttests. Qualitative data collection was carried out throughout the period of the experiment.

3.5.1 Conducting the Pretests

The two groups selected as sample were randomly assigned to experimental and control status. Both the groups were given the pretests using the same tools developed by the investigator for the present study. For each group the pretesting lasted two days. On the day one

the groups responded to the self-administered questionnaire for background information and the attitude scale, while on the second day they were given the gender stereotype test and the value test.

3.5.2 Administering the Treatment

After the pretests, the control group students continued to engage in the activities they normally did while the experimental group, in addition to their normal activities, participated in the treatment sessions.

Out of several strategies and models concerned with value clarification, moral education and communication, the Value Discussion Model developed by Sansanwal in 1986 was chosen as the treatment because it was the only model developed and validated in India, was comparatively recent and its approach was found to be consistent with the philosophy and paradigm of the Development Support Communication. It was also found suitable for the sample (Adolescents) and the content (Gender Equality). (Please refer to Conceptual Framework in Chapter 1 for details.)

Components of Value Discussion Model

Dilemma and Discussion are the two main components of Value Discussion Model.

Dilemmas are stories which present a central character in a problematic situation for which there are

several possible responses and in which number of issues come in conflict. Dilemma should present a problematic situation to which there is no single obvious right answer. An effective dilemma must offer a choice of actions and pose the question : "What should the central character do?"

The success of the model to a large extent depends on the way discussion is held. The students must feel free to give their opinions and share feelings. They should not feel censured or embarrased and their views are not to be evaluated. The researcher's role is to present the dilemma, encourage free discussion and intervene only when the flow of discussion goes off-track or gets stuck. Listening to adolescents in their own language, identifying their concerns and thinking process was also important for the present research.

Selection of Content and Developing the Dilemmas

The content selection for the experiment was done after extensive reading on gender equality issues (books, journals, research and committee reports, official documents and activist/grass-root publications) as well as from other communication media like television, films and radio.

The following criteria were considered for selection of content : age appropriateness, familiarity to the group, relevance to the group; scope for generating value conflict and providing opportunity for analysis, synthesis, evaluation, rethinking, questioning and decision making; and

encompassing various aspects of gender issues - home and family, work and economic sphere, law, social norms and moral standards, education, politics, public life and policy planning.

Sixty dilemmas were developed to begin with. They were discussed with a group of five adolescents in the neighbourhood, two secondary school teachers, two experts from the Department of Human Development and Family Studies and a group of five students of the class of Post-Graduate Degree in Journalism and Communication of the Maharaja Sayajirao University of Baroda. As a result of these discussion sessions twenty dilemmas getting the highest preference were identified for inclusion in the treatment.

Presenting the Dilemmas

Dilemmas were presented to students in Gujarati at the rate of one dilemma a day. The following communication modes and media were used for presenting the dilemmas in interesting and effective way :

* video recordings
* audio recordings
* film clips
* television snippets
* advertisements
* newspaper clippings
* oral and written presentations with the help of a blackboard

* role-play

* puppets

Detailed outlines of dilemmas with modes of presentation are given in Appendix 7.

Organising Small Group Discussion

Once a dilemma was presented each student took a tentative position about what action the central character should take. A good dilemma usually generates a division within the class on the action the central character should take.

Small group discussion maximised student-to-student interaction and generated thinking about reasons for supporting a particular position. Students felt more comfortable in small groups because all members of a single group had made the same decision and they got an opportunity to contribute to the discussion with relatively lower risk of failure or resistance.

Students were allowed to switch from one group to another if in the midst of the discussion they decided to change their position on action.

While students met in small groups, the investigator moved from one group to another helping students focus on the position taken by them, clarify their reasoning and list the best reasons for the position taken by the group.

Conducting the Class Discussion

The class discussion gave students an opportunity to report the reasoning which supported their position, to hear other reasons given for the same position and to hear reasons for other positions. They challenged reasoning of other groups and at the same time their own reasoning got challenged. As students debated the merits of one reason over another, they engaged in mental activities that facilitated value clarification and judgement.

In the class discussion the investigator had two main tasks : to promote interaction among students and to keep the discussion focussed on the value. The investigator used probe questions to help students examine issues they had ignored or to think of proper justifications in place of pseudo-justifications, to think about reasoning at a higher stage.

Probe questions would facilitate Value Clarification process because they help students

* to think increasingly in more generalisable terms
* to develop an increasingly broad societal perspective
* to focus increasingly on the larger value issues implicit in a dilemma.

Appendix 6 gives detailed description of the Proceedings of entire Value Discussion Session.

Closing the Discussion

Students with the help of the investigator, summarised on the blackboard all the reasons given for the choice of different positions. Thereafter the students had to individually choose the position which finally appealed to them, put it on a piece of paper and pass it to the investigator.

Public declaration of the positions taken by students was encouraged but there was no pressure for it, nor was there any direct or indirect pressure for a particular choice. The investigator refrained from passing judgement or evaluating the choices made by the students.

Running notes and a detailed diary was meticulously maintained by the investigator recording every dilemma discussion session. Appendix 7 gives for pre-discussion and post-discussion choices given by students for each dilemma.

Out of the 20 dilemmas selected for the experiment, only 16 dilemmas could be discussed in four months. Problems were many, interruptions frequent. Often sessions had to be cancelled at the last minute following electricity failure or sudden death of a student or of a political leader. Holidays were many. School cricket matches found half the students missing from the class. A strike to oppose hike in the bus-fare paralysed work for fifteen days

and examinations meant that students were not available first due to study leave, then due to actual examination and a couple of days after that they remained in the celebration mood.

3.5.3 Conducting the posttests

One week after the completion of Value Discussion Sessions in the experimental group, posttests were conducted in both the groups. The same tools that were used for the pretests were used for the posttests. For each group the posttesting lasted for two days. On the first day the groups responded to the attitude scale and the profession test while on the second day they were given the value test.

3.5.4 Preparation for Data Analysis

Each respondent in the control group and the experimental group was given a numerical code for identification and scoring was done for each test according to the scoring procedure discussed in detail in Section 3.4.3.

The independent variables were categorised and given numerical codes. For example, mother's education and father's education were classified in four categories :

Code	:	Category
4	:	Professional degree or post-graduation
3	:	Diploma, graduation, some college education
2	:	Standard 8 to S.S.C.
1	:	0 to Standard 7.

Codes were also given to reasons in the profession test.

Computerised data entry was used for greater ease, speed and scope for analysis and the data were analysed with the help of Statistical Package for Social Sciences (SPSS). The statistical techniques were decided after consulting a statistician with experience in educational and social science research. Frequencies, percentages, t-test and ANCOVA were used to test various hypotheses. The details and results of analysis are presented in Chapter 4.