Chapter - III

METHOD OF RESEARCH OR DESIGN OF THE STUDY

The present chapter includes an account of the problem under investigation, importance of the study, objectives and hypotheses, planning and procedure of the investigation, viz. the design of the study, sample selection, instruments prepared for the study, etc.

Statement of the problem

The present investigation aimed at a survey of sex-education programmes in vogue in schools and its impact on the social adjustment of girls studying in secondary schools of Gujarat.

A lot of hue and cry is raised against sex-education programme in Indian schools. It is being imparted in some schools under different names, such as family life education, moral education, and also as part of biology, social studies and literature, in various institutions like schools, colleges, orphanages, convents, scouts and girl guide camps, hospitals, family welfare centers and under the heading of social or preventive medicine in formal or informal situation. It has been quite clear from the discussion in the previous chapters that sex-education is meant to improve sexual behaviour of pupils for their better adjustment in socially desirable ways.

Importance of the problem

A number of surveys and researches have been undertaken in foreign countries like the U.K. and the U.S.A. in the field of sex-education. Some such attempts have been made in India also. But here, hardly any study has been undertaken to analyse the impact of a sex-education programme on human
behaviour so as to offset this social adjustment. Some parents, teachers
and administrators are on the contrary against imparting sex-education to
adolescents. One of the Principals of a high school in Ahmedabad once
argued against sex-education saying that many advanced countries like
the U.S.A. or U.K. impart sex-education to young children, nevertheless,
the rate of divorce, crimes, venereal diseases and drug addiction has in-
creased there instead of decreasing, while in countries where sex-education
is not formally given, all these have not increased to that extent. One
parent said, "sex-education is like showing a lollipop to a child and
telling him not to eat it". According to him, by imparting sex-education,
so many new things are introduced to adolescents and then they are told a
big "Don’t". Such parents advocate "ignorance is the best prevention". One
person said that in his family girls were married at an early age and nobody
taught them sex-education. Nevertheless, all of them are happily married
and are now proud mothers.

In a debate, on whether sex-education should be provided in school or
not, among residents of girls' hostels in Ahmedabad, some girls argued that
the knowledge of sex-functions could increase sex-crimes, one girl very aptly
replied, "Many innocent, adolescent girls fall victim to adult men in their
vicinity, just because they know only 'love', but not 'sex'. So even if some
girls fall victim to sex-crimes after knowing sex-functions, a fault committed
with full knowledge is better than one done in ignorance".

The human child responds to a tactile stimulation of sexuality in the
beginning and gradually with his growth he learns or is conditioned to res-
pond to other sense-stimuli towards persons of the opposite sex. Slowly he
develops adjustment to persons of his own sex and members of the opposite sex.
The early years of a child are of paramount importance in the development of adult sexual orientation. Sexual responses grow in a sequence from infancy to adulthood. Through his personal experiences and what he hears from outside, he learns what behaviour is considered desirable and is so, rewarded and what behaviour is called undesirable and is therefore punished. This is a form of adjustment to his society. Parents, peers and the society thus play an important role in moulding his ways of adjustment to his surroundings.

Impact of sex-education on social adjustment

Social adjustment also includes attitudes that an individual forms towards persons of his own sex and those of the opposite sex. A good social adjustment enables a person to live in harmony with the members of the society in a healthy way by developing favourable attitudes toward other human beings. When a person does not feel relaxed in his total set up, he feels tense and frustrated and his tolerance slowly reached a breaking point even. If he channels his native urges into different forms, his behaviour sometimes deviates from the normal. Anxiety, frustration, neurosis, hysteria, inferiority feelings, schizophrenic and other abnormalities are different forms of abnormal behaviour which have their origin in conflicts and conclusions, and according to Freudian postulates, all of them have a root in some sexual malfunction. The Freudian theory postulates that the behaviour problems are symptoms of underlying conflicts among instinctual demands (id), conscious thoughtful regulation (ego) and self-evaluative thought (superego). A conflict results from their interaction and has its origin in the unconscious mind. If it is brought out to consciousness and
proper treatment is given, the result is solution of the conflict and 
relief of the abnormal symptoms (Liebert et al, 1976).^2

Sex is the most powerful instinct in animals as well as human beings. 
It functions in most dangerous and destructive way, if it is used out of 
social norms in a selfish manner, but it becomes most beautiful, pious, 
constructive and creative, when it is used in a socially accepted way in 
a selfless manner to give happiness to the self and to others.

Sex-education helps a person to use his sexual instinct in a purpose­ 
ful manner remaining in social discipline, which helps him to be best ad­ 
justed without the feelings of guilt, conflict or confusion. Russell (1976)^3 
has discussed many aspects of sex and sexuality with reference to marriage 
and its impact on adjustment of a person within the institution of marriage. 
Arthur explored this field with reference to children. He suggests that 
lack of sex-knowledge and adverse attitude towards sex may develop neurotic, 
introvert and hysterical personalities.

In the context of the above discussion, it was decided to study the 
impact of sex-education programme on social adjustment including attitudes 
toward sex and sexuality in the present investigation.

Importance of sex-education for girls

There is a great necessity and importance of sex-education for girls, 
especially because they are future mothers and are to play an important role 
in the learning and development of their children. According to Carl Gustar 
Boethius,^4 Secretary of Swedish State Commission on Sex-education and Personal 
Relationship, women bear the heaviest burden of pregnancy, by teaching girls 
at school the functions of sexual organs, one could make it possible for them
to realize that they have to take care of themselves. Sex-education was therefore regarded by him as a support to sexual morality, especially for girls. He further states that in the modern society, girls are taught by their mothers about the facts of life much more often than are boys by their fathers or mothers.

Another reason for women to propagate sex-education is that they feel humiliated by men regarding sex as dirty. Saint Tulsidas said that woman is a kind of hell. (तामिन मारे हरि जनान मे) The modern woman does not accept this type of humiliation by man. By means of open knowledge, she wants to teach her children to regard sex as natural and the relationship between men and women, fine and beautiful. She does not want sex to be a matter of indecent stories in which woman is regarded as a sex object only and also the main culprit in sexual crimes. She therefore regards sex-education as a way to establish human dignity and liberation of women.

Another need for sex-education is to provide a knowledge of male and female sexual equality as men often are indifferent to the sexual satisfaction of women. Still another reason, especially in Indian condition where bride burning for dowry demands is quite common, is to assist women in self-evaluation and in taking independent decision for their married life.

**Explanation of terms**

In the statement of the problem, there are two significant terms which need explanation. The first term is sex-education and the other social adjustment.

The term sex-education is quite elaborately explained in Chapter II. It is education concerned with the reproductive process, which intends to
develop an understanding of sexual impulses and behaviour for promotion of successful family life, preparation for marriage and parenthood.

Sex-education is currently viewed as a formal instructional programme to provide children and young adults with an objective understanding of sex as biological, psychological and social life force. A comprehensive curriculum development for sequential age levels would include discussion of maturation of the reproductive process and perception of obligation to self and others, protection from sexually related diseases, exploitation and injury and awareness of the maturity required for full expression of sex in love relationship and family life.

The second term to be explained is social adjustment. For a layman, it means to harmonize with society to adopt social rules and regulations and to live happily with the human race. The term social adjustment is also explained by a distinguished authority in this field. The origin of the concept of adjustment was biological and it was a cornerstone in Darwin's theory of evolution. Biologically, this term when employed means adaptation. Darwin maintained that only those organisms who are best fitted to adapt to the hazards of the physical world survive. Biologists have continued to be concerned with the problem of the physical adaptation and many human illnesses are thought to be based on the process of adaptation to the stress of life, just as illnesses include diseases of circulatory system that produce coronary attack and cerebral hemorrhages as well as disturbance of the digestive tract such as ulcers and intestinal colitis.

The biological concept of adaptation has been borrowed by psychologists and renamed adjustment. The psychologist is more concerned with what might
be called psychological survival, similar to the physical survival of the fitted. Human behavior is interpreted as adjustments to demands or pressures. These demands are primarily social or interpersonal and they influence the psychological structure and function of the person.

Adjustment to external and internal demands

There are a large number of external demands that arise from the physical condition of existence. From the psychological point of view, however, those pressures arising out of one's existence as social being are of greater importance. A child from early childhood is conditioned to the demands of other persons to behave as desired by the society.

The process of socialization in response to anxiety and social pressure has been very effectively discussed by Allison Davis who has been concerned with the influence of social class factors in the development of personality.

Every human being works to gratify his impulses for his instincts such as those of hunger, love and sex. Many of our impulses cannot be gratified readily because they are disapproved by the society or are considered harmful. For example, one's sexual needs often conflict with social taboos (especially in adolescents) because the gratification of these needs is acceptable only through highly institutionalized forms such as marriage. Similarly certain forms of aggression, such as direct assault are rarely accepted in any culture. Therefore it must adapt and adjust according to social norms.

Adaptation is a basic tendency of an organism and consists of two processes of assimilation and accommodation and these two processes are
complementary. Assimilation involves a person's dealing with the environment in terms of his structure, while accommodation involves the transformation of his structure in response to the environment. Moreover, the processes are simultaneously present in every act. A human being is a social being. Therefore, assimilation and transformation take place in social setting. Hence in the present problem, social adjustment means harmonizing oneself to the demands of the society with special reference to sexual behaviour which are psycho-sexual or psycho-social (Erikson) in nature.

As Rogers put it, "At most basic level a concern with sex-education must stem from the recognition that human social-sexual development is a learning process." It is an interesting process taking place in a number of developmental context e.g. in the home, in the peer group, by the mass media, in the school and by adult in authority and by other developmental processes such as socialization, trial and error learning, exploratory behaviour, imitation, value and attitude acquisition, role learning etc. Dorothy Dalleo suggested that this development will result in a sexually educated young person or sexually uneducated young person. Her criteria are

<table>
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<tr>
<th></th>
<th>Sexually Educated</th>
<th>Sexually uneducated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sexual knowledge</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>2. Fear or ignorance based attitudes</td>
<td>None</td>
<td>Many</td>
</tr>
<tr>
<td>3. Human sexual behaviour</td>
<td>Mature</td>
<td>Immature</td>
</tr>
<tr>
<td>4. Self actualization in sex</td>
<td>Achieved</td>
<td>Not achieved</td>
</tr>
<tr>
<td>5. Responsible sexual decision making</td>
<td>Possible</td>
<td>Not possible</td>
</tr>
<tr>
<td>6. Sexual Communication</td>
<td>Good</td>
<td>Poor</td>
</tr>
</tbody>
</table>
The process of human social-sexual development is sexual conditioning. To differentiate between "sex-education" and "sexual conditioning" one should know that the term "sexual conditioning" is employed as the general one to refer to all acquisitions (by whatever method) of covert patterns of sexual behaviour. Whatever the individual learns as form of sexual functioning or develops an attitude towards such functioning, he is being sexually conditioned, when such learning is part of an organised programme, designed to instruct the individually regarding sex attitudes or actions. Thus sex-education is a special organised form of sexual conditioning and educational efforts are greatly affected by the other form of sexual conditioning to which members of a society are subjected.

Scope of the Study:

As is apparent from the title of the problem the population under study is girls studying in schools. It was later felt necessary that more precise description of population to be studied should be given before starting the actual study of social adjustment, opinions regarding sex-matters and sex-knowledge of girls. Since it was not possible to test the entire population of girls in school, it was necessary to choose a sample. The chosen sample should be representative of the population under consideration.

The investigator solved the problem by limiting the variety of individuals to be tested and selecting such activities as are largely common to their experience. In fixing the range of applicability of the present study, the following factors have been considered.
1. **Schooling**: The present study was intended to be applied to girl pupils studying in schools of Gujarat State.

2. **Age**: It is necessary to fix an age range for which the study is intended and is to be made applicable. This becomes inevitable when the entire population of a certain age group is to be included. In the present case, applicability of the instruments was limited to adolescent age roughly from 14 to 19 years. In the case of girls, menarche sets roughly at the age of 12.5 ± 2 years. After a study of works of different investigators, the present age group was decided. The most compelling arrangement for starting sex-education before adolescence is the fact that it is more readily and naturally accepted by children themselves at that age. By 14/15 years of age, they develop emotional attitude towards sex and this intervenes and introduces difficulties in instruction. Between 14 to 19 years of age, when a young girl is trying to adjust with her new conceived role of adulthood, and to adjust with her heterosexual companions, worries about selection of mate and her anxiety for social acceptance are the highest and this is the prime age when she really wants guidance for adjustment for her personal and social life. It would be imperative to check the impact of sex-education on social adjustment at this age.

3. **Cultural Background**: Culture or the environment of the girls plays a very crucial part in the balanced development of personality. For the present study, girls from all socio-economic status were included. As far as urban and rural areas were concerned, it was
decided to include urban population and some schools from semi-urban areas, where sex-education was being imparted. It was not possible to conduct experiment in rural areas since school-going girls of age group 14-19 were very few as they got married at an early age. It is also very difficult to make parents understand the importance of sex-education because of their traditional attitude.

Therefore, for the present study, the sample of girls studying in the school, in the age group of 14-19 years from urban and semi-urban areas was included irrespective of their socio-economic status.

**Design of the Study:**

Every good study or research is based on proper planning and systematic analysis of the points to be dealt with or taken care of. Therefore, it is necessary to decide the various aspects of the problem from its statement to its conclusion, through collection and interpretation of the data.
Planning of the study has to be done for the problem under investigation.

Objectives

The following objectives were kept in view in designing the study:

1. To study the sex-education programmes, if any, obtaining at present in various schools.

2. To analyse these sex-education programmes with reference to their contents, methods of imparting knowledge and types of educators and to design a programme which could be administered to girls of standards VIII to XI.

3. To find out the impact of sex-education on the opinions of girls for love, sex and marriage.

4. To find out the impact of sex-education on social adjustment of girls studying in schools.

5. To find out if sex-knowledge has any bearing on social adjustment.

6. To find out whether the socio-economic status of the girls affects their opinions, social adjustment and sex-knowledge.

Hypotheses

A tentative generalization or theory or assumption formulated about the character of phenomenon under study or observation is called a hypothesis. It is a statement temporarily accepted as true in the light of what is known at the time of the observation of the phenomenon. Hypothesis is also defined as an assumption or proposition whose testability is to be checked on the
basis of the compatibility of its implication with empirical evidence with previous knowledge. A hypothesis is a conceptual and verbal expression of ideas and concepts, which is ready for verification. It provides the framework for drawing conclusions. It prevents the review of the irrelevant literature and collection of useless data by providing direction to research. One way of setting the hypotheses in to put them in the form of null hypotheses, i.e. to assume that there is no significant difference in the dependent variables as an impact of the independent variables. The following hypotheses for the present study were thus formulated as null hypotheses:

Hypotheses

1. Sex-education does not improve the opinions of girls regarding love, sex and family relationships.
2. Sex-education does not improve the social adjustment of girls.
3. Sex-education does not improve the sex-knowledge of girls.
4. Sex-knowledge does not improve the social adjustment of girls.
5. Sex-knowledge does not improve the opinions of girls regarding love, sex and family relationships.
6. There is no difference among different socio-economic strata for opinions about love, sex and family relationships.
7. There is no difference among different socio-economic strata for social adjustment.
8. There is no difference among different socio-economic strata in the matter of sex-knowledge.
9. There is no difference among girls of different school grades for social adjustment.

10. There is no difference among girls of different school grades for opinions for love, sex, and family relationship.

11. There is no difference among girls of different school grades for sex-knowledge.

12. There is no difference among boys and girls in regard to their opinions about love, sex, and family relations after sex-education.

13. There is no difference among boys and girls in regard to social adjustment after sex-education.

14. There is no difference among boys and girls in regard to sex-knowledge, after sex-education.

15. There is no difference among girls of different IQs in their social adjustment.

16. There is no difference among girls of different IQs in their opinions on love, sex, and family relations.

17. There is no difference among girls of different IQs in their knowledge about sex after sex-education.

In order to check these hypotheses, the study had to be designed. The design of the study should permit the analysis of the data collected in such a way that definite conclusions can be made as to the hypotheses set up.

Before the actual design of the experiment is presented, it would be good to clarify random points involved in the assumptions.
Usually there are two types of variables in an experiment. There are dependent variables which are affected by the independent variables. In social researches, it is, however, very difficult to control different variables in an experiment, because human beings cannot be subjected to controls like animals and many times, it is unethical to put constraints on human beings. It is easier to conduct experiments on school children, because they could listen to the instructions given to them. Secondly, they are still in developing form and so certain variables in their behaviour can be moulded as desired. At the same time, the experimenter realise that the school children have many other avenues of getting knowledge, skills, etc., which the experimenter wants to impart to them—other than those through which she plans to impart.

The experiments on school pupils therefore are not really scientific because of many loopholes. The designs of the experiments are therefore called quasi-experimental designs.11

Experimental Designs

In educational or psychological experiments, a number of experimental designs have been tried out by various experimenters. If all controls are possible to make, the pre-test, post-test control group with random assignment is one of the best designs. In this design two groups are equated by assigning subjects to both by random method. The control group and the experimental group are given pre-test in which their mean scores on the dependent variable are almost equal. Then the control group is not given any treatment, but the experimental group is administered the treatment the
effect of which is to be found out. Then both the groups are given the post-test and their results are compared.

\[ A_0 \times 0 \]
\[ A_0 \times 0 \]

However, in most of the educational experiments random assignment to the control and experimental groups is not possible and so two classes of pupils are taken as control and experimental groups and the treatment is given to the experimental group after a pre-test is administered to both the groups or sometimes that is also not possible to do. So the comparison is done only on the basis of the post-test. Such designs are not truly experimental designs but they are called quasi-experimental designs by Campbell and Stanley.  

**Non-equivalent control group design**

This is the most widely used quasi-experimental design. It is represented by the following diagram:

\[
\begin{array}{c}
0_1 \times 0_2 \\
\hline
0_1 \quad 0_2
\end{array}
\]

where \(0_1\) represents the pre-test, \(0_2\) the post-test, \(X\) the treatment which is given to the experimental group only and the broken line indicates that the control and the experimental groups are not formed randomly.

Since the control group is not administered the treatment, the results of the pre-test and the post-test, if they are the same, would not be different. But in the experimental group, \(0_2\) will be affected by the treatment and so \(0_2 - 0_1\) will show this effect which can be compared with a similar difference in the control group and evaluated.
Since the two groups are not chosen by the random method, the means of the two sets of scores have to be adjusted by the analysis of co-variance.

Time-series Design of Pre-test Post-test Design

In this design, a single group of subjects is measured at periodic intervals, several times or twice only. It is represented by the following diagram:

\[ 0_1 \times 0_2 \times 0_3 \times 0_4 \text{ or } 0_1 \times 0_2 \]

If the same group is administered the test several times, say four times, and if between the second and the third test the experimental treatment is given to it, the first diagram represents it and if only a pre-test and a post-test are given, the second figure will represent it. Several periodic measurements will enable the experimenter to observe the differences in subsequent trials more powerfully. The latter is similar to the pre-test, post-test design which many experimenters usually use. In this design, there is no control group with which the results are compared and so the results will be affected by the type of the group, whether it is strong in a subject or weak.

One shot case study or post-test only design

In this design, an experimental treatment is administered to a group and then a post-test is administered to measure the effects of the treatment. This design, though poor in internal validity, is used largely in educational experiments. Since there is nothing else in this design to compare the results with, it is a weak design. By measuring a phenomenon only once, it is not possible to know the increase or decrease in it. Even then, it is used largely because there are many educational innovations, the effect of which is to be measured after it is over.
Research Designs used in the present study

There are a number of research designs which could be used with relative merits and limitations in the present study, but in view of several constraints, the following three designs were used:

1. Control group, pre-test, post-test (non-randomised) design.
2. Pre-test, post-test one group design.
3. Post-test only design.

Control group, pre-test post-test (non-randomised) design

The main experiment was performed according to this design in Std. VIII, IX and X of a school in Ahmedabad. Although this design is quasi-experimental, it was employed because no school was ready to allow the experimenter to form control group and experimental group from its pupils using the random method, because what the remaining girls would do during the time of the study was a big problem. Usually the schools allow experimenters to utilize a whole class, but not a part of a class for the above reason.

For evaluating the change in opinions for sex, love and marriage, an opinionnaire was prepared and was standardized by finding out the item validity and item facility and then revising the test.

For evaluating the change in the adjustment of girls, another adjustment inventory was prepared and passed through item-analysis as was done for the opinionnaire.

Similarly, a sex-knowledge questionnaire containing questions related to sex-matter, anatomical diagrams of male and female sex organs and a vocabulary test regarding sex matters was prepared and standardized.
These three instruments were used as pre-test and post-test with both the control group and the experimental group.

A special sex-education programme was also prepared which included the following:

1. Three charts depicting the anatomy of male and female sex organs (like the three diagrams in the sex-knowledge questionnaire in the appendix) of sufficiently large size which can easily be seen by the whole class. With the help of these charts the anatomy of sex organs was explained to the girls by the experimenter herself.

2. Films on human reproduction were shown to the pupils.

3. Talk on healthy opinions about sex, love and marriage and the right attitudes that people should form about sex-matter was discussed by the experimenter. Girls were allowed to ask questions about any matter in the diagrams, films or talk and the experimenter tried to give answers satisfying their curiosity.

The above programme of sex-education was given to the experimental group only and not to the control group as shown in the diagram below:

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Experimental group</th>
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<tbody>
<tr>
<td>VIII, IX, X</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Pre-test</td>
<td>Pre-test</td>
</tr>
<tr>
<td>Post-test</td>
<td>Post-test</td>
</tr>
</tbody>
</table>

Sex-education Programme
The three instruments were again administered to both the control and the experiment group at the end and the performance of the two was then compared.

In drawing conclusions regarding the ultimate difference in the scores obtained through the post-test, the means of the two sets of scores were adjusted by the analysis of covariance and then the significance of the difference was estimated.

**Pre-test, post-test single group design**

Although significant results could be obtained by the first design, it was thought advisable to replicate the study in two other schools where a single group design was employed. One class of each of Std. VIII, IX and X of a school was selected for this experiment.

The same procedure of pre-test, sex-education programme and post-test was followed in these three classes also.

In another school this design could be followed for Std. VIII and IX only as the Xth class had already been given some sort of sex-education instruction.

**Post-test only design**

There were several other schools where some sort of sex-education was imparted in various grades. It was thought advisable to study the performance of girls of Std. VIII, IX and X and in a few cases of Std. XI and XII also on the three instruments and to compare it with the experimental groups of the two main schools under study. Although the limitations of this design were known, additional replications of the experiment where the sex-education
programme were very different was worth doing. For a varied comparison, some schools of Nadiad, Bombay, Darjeeling and Delhi were selected for this design. After the analysis of variance to find out whether the schools differed from one another significantly, Duncan's test was applied to check it further.

Other studies

Two more studies were also done in addition in which (i) a comparison of the girls' performance in design was made with that of boys and (ii) scores of girls on opinionnaire, adjustment inventory and 5K test were correlated with their scores on Davel-Shatt Group Test of Intellignece. These studies were undertaken to see how the girls' performance on the three instruments compare with those criteria.
References


15. Ibid., p. 538.
