

CHAPTER VI

DISCUSSION

The discussion in this chapter is geared around the major findings of the present study i.e. gain in knowledge and understanding of Ss on population concepts after the experimental teaching and the evaluation of the population education programme for secondary school students.

A few experimental studies carried out, and the experiences of the projects in El Salvador, the Philippines, the Republic of Korea and Tunisia indicate that individuals gain in knowledge and understanding related to the population education when efforts are made to teach the same to them through relevant content, well planned teaching strategy and audio-visual aids by an efficient teacher (Population Reports, 1982). Robinson (1976) taught five lessons in the five selected areas of population situation to a sample of 27 students of VII grade at Baroda. A single group pre-test post-test design was used. The results revealed a significant difference in the acquisition of the knowledge by the students after the experimental teaching. Desai and his team (1973) undertook an experiment during 1975-76 to develop suitable curriculum for the pupils of grades VIII to IX. This curriculum was tried on 250 pupils from 5 schools of Ahmedabad. The experiment proved that the students gain in knowledge or information on population dynamics when taught in the classroom situation. The study by Sounderaraj (1978)

revealed that the college students who were taught population concepts gained significant knowledge as compared to the control group. The ability to form better opinions about population situation also increased in students as a result of instructions in population education through a prepared curriculum. The results of the four studies (two at Philippines, one in South Korea and one in Baltimore, U.S.A.) also revealed significant increase in knowledge about population issues when compared with control group (PEC¹, South Korea, Baltimore) or the same students before taking the courses (WPC²) (Population Reports, 1982). The findings of the present study are also in concordance with the above studies. Both boys and girls have gained significant knowledge and understanding of the population concepts under study after the experimental teaching.

On comparing the gain in knowledge between boys and girls on the four major areas of population education in the present study it is found that both boys and girls have gained least knowledge in the area on determinants and consequences of population growth. The comparison of the Ss own knowledge before the experimental teaching indicates that both boys and girls had greater knowledge in this area as compared to other areas, i.e. Demography, Human Reproduction and Family Planning. The results of the study conducted by Patel (1971) on students of X and XI standards

1. The Wesleyan Population Centre in the Philippines (WPC).
2. The Philippine Women's University Population Education Centre (PEC).

revealed that these students realized that over-population has a bearing on their personal and social life as well as the impact of large size family on their personal measures. Mangalika (1977) found that the 9th grade students of Sri Lanka were generally aware of the problems of the country but not the consequences of the same in the long run. The study conducted by Karnick and Dave (1978) also revealed that the 550 Ss studied from IX and X grades studying in secondary schools of Udaipur District had comparatively higher knowledge on Determinants and Consequences as compared to other areas under study. From these results one is likely to infer that through the mass media and the government propagated programmes the students do manage to acquire information regarding the Determinants and Consequences of Population Growth.

As indicated by the results of the present study both boys and girls had low knowledge in the areas on Human Reproduction and Family Planning before the experimental teaching. The comparison between the knowledge of boys and girls before the experimental teaching further reveals that boys had higher knowledge in the area on Family Planning as compared to girls. There is a marginal difference in their knowledge in the area on Human Reproduction before the experimental teaching. As revealed through the questions asked by them in the discussion session during the experimental teaching, the Ss do not have the knowledge and understanding about some of the basic concepts under these two areas like, what is a physical union between male and female? Why does a

women conceive before marriage? Can one have menstruation after tubectomy?, etc. Raval (1971) found that the students of XI standard are moderately aware of the structure of the reproductive system but significantly lack the knowledge of the functional part. Patel (1971) revealed that the students are aware of the family planning programme but not the methods of contraception. Bali (1975) arrived at the finding that in case of contraceptives and family planning methods rural children were quite lacking in knowledge. This study further revealed that the urban children had better knowledge compared to their rural counterparts but their knowledge regarding child bearing was very vague, wrong and misconceived. Very few know about the exact physiology and biology of human reproduction. Bali, Gulati and Murali (1975) also found that ■ most of the children between the age group 11-18 years were aware of the family planning programme but their knowledge regarding conception and child birth was vague. The Ss studied by Karnick and Dave (1978) also had low knowledge on human reproduction and family planning. Further these Ss did not have the knowledge about even the basic concepts underlying these two areas, e.g. meaning and physiological process of menstruation, child bearing age of woman and its effect on the mother and child, meaning of family planning and methods of contraception. Vlossoff (1980) found that the rural adolescent females were poorly informed about menstruation sex and reproduction. Forty per cent of the respondents who had reached puberty claimed that they knew nothing about menstruation before its

commentement. Sixtytwo per cent of the post-pubescent adolescents were unaware of the connection between menstruation and reproduction.

All these studies clearly emphasize that the adolescents have either very low knowledge and understanding or have vague and misconceived notions about human reproduction and family planning. It is very evident that the information on human reproduction and family planning is no where included in their curriculum. It is still considered to be taboo in many homes. The 'hush-hush' attitude of the people towards such information keeps the young adolescents away from this knowledge and understanding in our culture. The content under the present experimental teaching programme provided them the information on human reproduction and family planning. Moreover, during the discussion sessions after the classroom teaching their queries and doubts related to these two areas were dealt with in a frank and scientific way. Hence, it is inferred that they have increased in their knowledge and understanding regarding these two areas after the experimental teaching. In the area of human reproduction the boys have acquired more knowledge whereas in the area of family planning the girls have gained more knowledge after the experimental teaching.

As regards the common sources of information related to sex, marriage and family planning, Patel (1971) found that the usual source of information on this aspect is friends and sex literature available in the market. The study by

Vlessoff (1980) revealed that many older adolescents in the study had acquired some knowledge from newly married friends, but they possessed only vague notions concerning the sexual act itself. The Ss in the pilot study by Dave (1978) as well as the present study prior to the experimental teaching in their interviews expressed that they have a great need for information on human reproduction and family planning since they have no one to go to and have their queries answered related to these issues. They also stated that they usually collect the information through stories or novels, pictures and from friends. They admitted that these sources were not satisfactory. Thus, it can be concluded that since the experimental teaching programme provided scientific information on human reproduction and family planning the Ss have shown greater gains in their knowledge in these two areas as compared to the other areas of study.

The results of the present study in terms of the acquisition of knowledge and understanding by boys and girls reveal that the girls have gained more knowledge on the total knowledge inventory. The boys, on the other hand, have acquired greater understanding of the total population situation after the experimental teaching. A careful study of the results obtained on the boys and girls regarding their knowledge and understanding before the experimental teaching reveals that boys were already at a higher level of knowledge as compared to the girls, whereas the girls had a little edge over the boys in understanding of population

situation. The very fact that the boys have greater opportunities for exposure to social groups and mass media communications, might lead them to acquire incidental knowledge in these areas. The girls in our culture are more home-bound. They obtain the information from their friends or by listening to the talks of the older ladies in the families. The elaboration on the various issues which are generally a part of the discussions of the women folk in families might provide the girls greater understanding regarding the issues related to human reproduction and family planning. During the teaching process also the girls have shown greater eagerness to obtain factual information regarding various aspects of human reproduction and family planning whereas the boys have comparatively participated more actively in the discussion sessions to clarify their doubts. One is likely to infer from this that the girls had more need to gain information and the boys had greater need to clarify their doubts regarding the information that they had already obtained incidentally. Therefore, the teaching programme might have helped the boys to develop greater understanding whereas the girls acquired higher knowledge regarding population concepts.

It is interesting to note the higher percentage of responses of the girls as compared to boys to the 'Do not know' category, specially in these two areas of human reproduction and family planning both before and after the experimental teaching in the present study. It can be inferred that the girls are more shy and hesitant to answer the

questions related to human reproduction and family planning. They may not like to admit their knowledge in these two areas. The same is reflected in their responses to the story situations. In order to elicit answers from the girls to the story situations greater probing had to be done as compared to the boys both before and after the experimental teaching. May be it is because in our culture the girls are expected to be comparatively less open and frank in discussing matters related to human reproduction and family planning with others, specially the elders in the society.

Besides the gain in knowledge and change in understanding of the Ss the present study also aimed at the overall evaluation of the programme in terms of content, teaching strategies and the evaluation procedure adopted by the investigator.

Content: As yet no curriculum models exist which can be used for teaching population concepts to secondary students in our country. Therefore, the selection of the content has to be based on its relevance to the target group as well as on the goals of the country, to constitute the conceptual structure/framework of population education.

The major content areas for population education programme as reflected in the NCERT draft syllabus (1971) and the various projects and innovative attempts on curriculum development in the different parts of the world, include population dynamics, determinants and consequences of

population growth, human reproduction and family planning. The inclusion of the areas on human reproduction and family planning has been a controversial issue in the past. The series of studies conducted by Pholman and Rao in 1970s on how parents, teachers and children view birth planning recommended "a sexless population education". While Poffenberger (1971) stresses the need for its tactful inclusion in the school curriculum. Vlesseff (1980) found that parents generally preferred to let the girls find out for themselves about menstruation. Though this has been a controversial issue, it is important to understand the basics of human sexuality with its biological, psychological and sociological components. Awareness that family size is controllable through understanding of the menstrual cycle needs to be developed (Villanueva, 1976).

The results of the present study obtained before the experimental teaching indicates that the Ss had very low knowledge and understanding regarding the basic concepts in human reproduction and family planning. But given the opportunity to learn about these through the experimental teaching, they have gained higher knowledge on these two areas as compared to other areas under study as discussed earlier. The evaluations of the content of the present study reveal that the Ss, the headmasters and the investigator have expressed the need to include human reproduction and family planning in the programmes on population education for secondary school students. This leads to another related issue which is

whether the content for boys and girls should be the same. The Ss, the headmasters, the supervisor and the investigator in the present study are of the opinion that the basic content for boys and girls must remain the same. Since the decision-making process regarding their reproductive behaviour must be a joint one, both boys and girls must know about each other's reproductive system. However, the supervisor feels that during teaching the emphasis may differ in terms of the cultural expectations from boys and girls regarding their reproductive behaviour.

Teaching Method and Communication Strategies

Population education can be introduced either through or an entirely separate course/by way of incorporating topics into the existing courses. Parameshwarappa (1975) found that the information gained by the secondary school subjects was significantly higher in the integrated method as compared to the wholistic method. Various population education projects in the different parts of the world have preferred the integration approach as the students have already too many subjects to study at the school level. The National Population Education Project in India launched in 1980 has also adopted the integration approach for this very reason. The work in curriculum development is progressing at different levels in the various states towards this direction. In the absence of evaluation studies related to the efficacy of teaching approaches the investigator adopted the wholistic approach for an experimental tryout of the suitability and

1 acceptability of population concepts, for the secondary school students.

 The experiences of the investigator reveals that through the wholistic approach the teacher is in a better position to provide the comprehensive knowledge and understanding of the population concepts to the target group. The success of this is also reflected in the higher gains in knowledge and understanding of the population concepts by the students after the experimental teaching. Since the present study basically aimed at finding out the suitability and acceptability of the population education programme it was decided that the experimental tryout with the students enrolled in the schools would be preferred as it facilitates the entire process of experimentation. Once the programme is experimentally tried out it can also be adopted for the out-of-school youth in a non-formal setting. Moreover, at present, the emphasis of the National Population Education Project is on the in-school students, and hence this approach can be justified.

 In order to impart population education, like any other education, the role of the teacher is very crucial. The results of the present study also reveal that the frank, confident and scientific approach of the teacher has contributed a lot to the efficacy of the programme. The language used by her was found to be simple for understanding as stated by the Ss and the supervisor. The experiences of the

investigator herself reveals that the teacher needs to know her content well but more than that she needs to present the content in a very effective way. The rapport between the teacher and the taught has to be well established so that the students are open to ask questions and clarify their doubts. This was very evident during the experimental teaching. As the teaching advanced, there were more and more discussions following the classroom teaching. The Ss have expressed that in the beginning they (specially the girls) were hesitant to ask questions but later on they had no inhibitions of any kind. They felt free to clarify their doubts. As the Ss and the supervisor expressed, the students could overcome their inhibitions partly due to the frank and scientific approach used by the teacher for communicating with them about human reproduction and family planning. To give an example, one of the girls after the first lesson on human reproduction raised a query whether the teacher was going to teach all this to the boys also? "Will you not feel shy to talk about all this to them?" The girls were made to understand the need of teaching human reproduction to the boys. Moreover, the investigator expressed no hesitation in teaching human reproduction to boys like any other subject as all this is scientific information which each one should know before his/her marriage. This clarification helped the girls to ask questions to the investigator without hesitation.

A major barrier to population education programme is the lack of suitable teaching materials (audio-visual aids).

Teaching any subject, including population education, is easier if straight forward, practical and familiar teaching aids are available. When 133 teachers in Florida (U.S.A.) were asked what should be most useful to them when they taught population topics, 70 per cent wanted simple audio-visual aids, and 68 per cent wanted student work-books. Providing teachers with simple audio-visual materials has been stressed by a number of experts (Population Reports, 1982).

The experiences of the Ss, the supervisor and the investigator confirm that in the present endeavour also the teaching materials (audio-visual aids) were selected appropriately to suit the content. The variety along with the meaningfulness was taken care of in selecting/preparing the aids so that it creates interest in the students. The Ss have expressed that they liked the film and film-strips most of all for the obvious reason that they are both audio and visual. The other aids used like graphs, charts, blackboard illustrations were also appreciated by the Ss. The investigator and supervisor felt that these helped in the effectiveness of the teaching-learning process. The use of these aids helped both the teacher and the student for effective teaching and learning. The retention and recapitulation is more if the teaching aids are used meaningfully.

Thus, the teaching methods, the teacher and the use of audio-visual aids are important means to deliver the population education content effectively to the target group.

Evaluation Procedure:- Like all education, population

education programmes are difficult to evaluate (Population Reports, 1982). As yet there is no accepted system for evaluation. The evaluation procedure adopted for the present study was twofold. One to evaluate the gain in knowledge and understanding and the other to evaluate the suitability and acceptability of the total programme.

Initially various community based activities and assignment i.e. drawing of maps and charts were planned to evaluate the understanding in the Ss regarding the population concepts. Unfortunately, due to lack of time due to a tightly scheduled teaching programme the Ss could not attempt those activities. The evaluation procedure thus aimed at studying the gain in knowledge and understanding of the Ss regarding the population situation through the evaluations before and after as well as during the experimental teaching. These various evaluations reveal that the Ss have gained knowledge and understanding on the total population situation. However, the lesson evaluation reveals that the Ss have gained low knowledge and understanding regarding the interrelationship between population growth and quality of life. They have also developed less understanding on the relationship between early marriage and the increase in the reproductive span of woman. These concepts are of vital importance in terms of regulating their future reproductory behaviour. Hence, they should be dealt with in greater details and evaluated carefully.

The programme on population education can be further evaluated in terms of attitudinal and behavioural

changes in the Ss. A study in 1968 of a pilot programme in Columbia found that along with knowledge gains, family size preference decreased on an average of about 3.1 to about 2.75 (Population Reports, 1982). It would be very premature to make any comments on the extent to which the present population education programme will lead to changes in fertility related behaviour. In a country like ours, with our deep-rooted religious beliefs and traditions which have been instilled in us from generations it is difficult to predict.

In the present study also it has been revealed that inspite of the fact that the Ss have correct knowledge regarding how conception takes place and the determinants and consequences of large family size, they find it difficult to accept that family size can be controlled by the couple. The major reason for this being their deep-rooted religious beliefs and traditions regarding the importance that is attached to 'Pooja' and 'Manata' (vows) to have a son to ensure security in old age. Burleson (1968) has very rightly stated, "it is difficult to measure actual behavioural change". Our Government is trying to develop understanding in the younger generation to adopt small family norm through population education as well as other welfare programmes but to what extent their impact can be measured is still a question.

Besides the gain in knowledge and understanding in the Ss the evaluation procedure also aimed at the overall evaluation of the programme. The evaluations by the Ss, the

supervisor and the investigator reveals that the programme has been found to be suitable and acceptable for secondary school students in terms of its content, teaching method and audio-visual aids used by the investigator.

The overall evaluation of the programme also includes the need of such education for the secondary school students. The findings reveal that though this should be an integral part of education at all levels, priority should be given to secondary school students as they are at the threshold of marriage and family. The future pattern of the country will depend on the decisions they take regarding their reproductive behaviour to improve their quality of life. They are the parents to tomorrow. And therefore, undoubtedly they must be given priority for this education.

A curriculum which is need-oriented and knowledge-based and has been experimentally tried out can be easily adopted by the Rajasthan State Government with the suggested modifications as it has been found suitable and acceptable for secondary school students. This age group is already with-in the purview of the long-term objectives of the Rajasthan State and as yet the curriculum has been planned only for the grades 3-8. Hence, the population education content/will be of great use to the curriculum planners of the state.