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A STUDY OF THE CURRICULAR STRATEGIES AND
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A STUDY OF THE CURRICULAR STRATEGIES
AND APPROACHES BEING DEVELOPED IN
POPULATION EDUCATION

by

Sushama Merh

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Presented to the Graduate Committee

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The study is dedicated to my parents.

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GLOSSARY OF ABBREVIATIONS

1. CEERI: Central Educational Research Institute
2. CHEB: Central, Health and Education Bureau (India)
3. CPC: Carolina Population Center (the U.S.)
4. EWCI: East-West Communication Institute (the U.S.)
5. FAO: Food and Agriculture Organization
6. FPAI: Family Planning Association of India
7. IBE: International Bureau of Education
8. ILO: International Labor Organization
9. IPPF: International Planned Parenthood Federation
10. ISCOMPE: International Study of the Conceptualization and Methodology of Population Education
11. NCERT: National Council of Education, Research, and Training (India)
12. OECD: Organization of Economic Cooperation and Development
13. PEP: Population Education Program (the Philippines)
14. PRB: Population Reference Bureau (the U.S.)
15. UNESCO: United Nations Educational, Scientific and Cultural Organization
16. UNFPA: United Nations Fund for Population Activities
17. UNICEF: United Nations International Children's and Education Fund
18. USAID: United States Agency for International Development
19. WCOTP: World Confederations of the Teaching Profession, Morges, Switzerland
20. WHO: World Health Organization

ABSTRACT

The purpose of this study was to analyze the curricular and pedagogical strategies and approaches being developed in the evolving educational innovation known as 'Population Education' and its implications for teacher education. The term 'Population Education' refers to the educational programs dealing with the relationships and interactions between the demographic and non-demographic variables at the individual and societal level, within various formal and non-formal educational settings for different audiences in order for them to make informed and rational decisions regarding population matters. The present study was focused on the formal educational programs in Population Education. The specific aspects of the study included:

1. An examination of the concept of Population Education in terms of rationale, goals and content and identification of the curricular and pedagogical issues.
2. Establishment of guidelines for the formulation and organization of the content base (knowledge base) in Population Education.
3. Analysis of the prevailing curricular and pedagogical strategies in order to evolve a framework for the process of curriculum development and implementation.
4. Examination of the educational implications of the concept in terms of teacher education.

The overall nature of the study was global and conceptual with an emphasis on the Asian countries and the United States. The intent

was to analyze, organize, and synthesize the different operational and conceptual viewpoints inherent in the various national and international programs within a total theoretical perspective. This was done in order to provide educators, curriculum planners, and teachers with a comprehensive sourcebook for curriculum development in Population Education.

Literature was reviewed from 1965, which marks the beginning of worldwide Population Education programs, to 1978, including UNESCO documents and programs being developed in India, the Philippines and the United States. The researcher conducted an extensive review of individual publications, conferences and correspondence with experts in the field, and visited selected institutions in the United States. The information gained from these sources formed part of the data collection process.

The methodology for the process of content analysis of the documents was designed in four stages: (i) the schema of broad categories; (ii) the tabular matrix for organizing and enlisting the various documents in terms of rationale, goals, content and methodology; (iii) a further breakdown of categories into specific characteristics to be identified; and (iv) the overall conceptualization process composed of five basic questions as follows: the What?, Why?, How?, Where?, and When? of Population Education. A significant aspect of the methodology strategy was the designing of a 'contextual paradigm' of the various population and educational parameters implied in Population Education in order to facilitate the interpretation of the interdisciplinary and issue oriented curricular area.

The analysis resulted in the following observations and conclusions:

1. Examination of the diverse viewpoints with regard to rationale, definitions, goals, and content provided the factors and criteria in developing guidelines for Population Education curriculum.

2. The relationship and overlapping of the content of Population Education with other curricular areas distinguished some of the special features of Population Education as a curricular area.

3. These features provided the alternative frameworks for the formulation, organization and transformation of the knowledge base into instructional materials for students and teachers.

4. Examination of the concept at the operational and theoretical levels provided curricular and methodological strategies. This included the sequential steps in the process of curriculum development in the context of the total educational system, within a systems perspective. This was illustrated through the formulation of the 'Wayland-Model.' Implementation strategies included various modes of inclusion and approaches illustrated through examples.

5. Educational implications highlighted the role of university department/College of Education in Population Education for teacher education, and the implications of the relationship of the concept with the emerging trends in education, such as interdisciplinarity, futures education and values education in developing curricular approaches in Population Education.

The study concluded that Population Education is a valid, timely, and relevant curriculum innovation to meet the educational

needs of the rapidly changing human situations. Its form and implementation will be based on national, political, cultural and educational settings of a country, including its population situation and perception. As diffusion proceeds the concept will integrate into several curricular approaches capable of contributing to educational innovation and renovation.

Further research was suggested in the following areas:

1. Synthesis of already existing research data in several related areas to build up the knowledge base for curricular planning.
2. Studies related to the role of cultural factors and education in population socialization.
3. Relative effectiveness of alternative methodological approaches in Population Education.
4. Application and effectiveness of systems planning in Population Education.
5. Development of curricular models for specific situations.
6. Basic research in the relationship of demographic factors, such as declining birth rates to other variables, within a futuristic projection framework.
7. Studies related to the level of education and fertility patterns in different cultural and socio-economic contexts.
8. Status of women and fertility patterns.

CHAPTER 1: PURPOSE OF THE STUDY

- 1.1. Statement of the purpose
 - 1.1.1. Objectives
 - 1.1.2. Definition of terms
- 1.2. Introduction
 - 1.2.1. The population situation
 - 1.2.2. Family planning programs and Population Education
 - 1.2.3. The World Population Year
 - 1.2.4. Issues of the Seventies and Population Education
- 1.3. The emergence of Population Education as an educational concept
- 1.4. Need for a theoretical frame of reference for the Population Educator and the curriculum developer
- 1.5. Overview of the study

CHAPTER 1

PURPOSE OF THE STUDY

This introductory chapter provides an overview of the rationale for and status of the educational phenomenon known as 'Population Education.' The purpose of the study is introduced and a definition of terms is provided. An overview of the study concludes Chapter 1.

1.1. Statement of the purpose:

The purpose of this study was to analyze the evolving curricular and pedagogical strategies and approaches in Population Education, with special emphasis on the implications for teacher education.

1.1.1. Objectives:

1. To develop a contextual frame of reference for the analysis and interpretation of the concept of Population Education.
2. To examine Population Education in terms of rationale, goals and content and to identify the curricular and pedagogical issues.
3. To present the various perspectives on the formulation of the knowledge base, and establish guidelines for its organization.
4. To analyze the prevailing curricular and pedagogical viewpoints and strategies and evolve a framework for the purpose of curriculum development.

5. To study higher education programs in Population Education being introduced in India, the Philippines and the U.S. and discuss the educational implication of the concept for teacher education.

The overall nature of the study was global and conceptual, with a focus on the Asian countries, and the U.S. . Curricular programs being developed in India, the Philippines and the U.S. were analyzed in greater detail, as compared to programs from other countries, even though illustrations from the latter have been used.

1.1.2. Definition of terms:

(1) Population Education:¹

...the educational process which assists the individual (1) to learn the probable causes and consequences of population phenomena for himself and his communities (including the world); (2) to define for himself and his communities the nature of the problems associated with population processes and characteristics; and (3) to assess the possible effective means by which the society as a whole and he as an individual can respond to and influence these processes in order to enhance the quality of life now and in future. (Viederman, 1975, p. 56)

(2) Quality of Life:

(a) 'Quality of Life' is a relative value one gives to the situation of life in terms of health, education, economic, political, religious, social-psychological welfare... (Udomsakdi, 1972, p.4)

¹A detailed analysis of this term is presented in Chapter 5.

- (b) The concept of 'quality of life' connotes extension and deepening of human capacities, in individuals as well as in the societies that they form.... The selected areas represent some of those external conditions without which human capacities, in individuals and in societies, suffer grave deprivation. They also represent the basic shared aspirations of the nations as reflected in their national developmental plans. (Population Education in Asia: A Source Book, UNESCO Office for Education in Asia, Bangkok, 1975, Part 4: Overview of the Section)
- (c) The ISCOMPE study (UNESCO, 1978, p.11, Footnote 3) explains the term as follows:

The term "quality of life", as used both by the "World Population Plan of Action" and throughout this report, is not synonymous with the term "standard of living". The material well-being of a people - their standard of living - is usually defined in quantitative terms - the levels of income, of consumption, of consumer goods and essential services, such as electricity, sewerage and water. These measures are at best one index in a much larger quality-of-life complex. There appears to be general consensus that other major components in the concept of quality of life include measures associated with distributive justice, such as opportunity of access to health, education and social services, the quality of social and interpersonal relationships, of cultural and religious affiliations and of environment. The fact that few of these latter qualities can be measured with any exactitude does not in any way decrease their significance. It is important to recognize that, in certain cases, standards of living may be low but quality of life high, and vice-versa.

(3) Knowledge base:

...refers to the established body of concepts and data in a particular field of intellectual endeavor. In the context of Population Education, it refers to that body of content and data related to population matters from which the curriculum developer can

draw for the substantive aspect of his curriculum designs. (Population Education in Asia: A Source Book, UNESCO Office for Education in Asia, Bangkok, 1975, part 2, p.5)

(4) Folk-demography:

...the population-related knowledge and values which students have acquired in their socialization in their communities....Folk sayings, proverbs, classic stories and songs may well have encapsulated some of this folk wisdom but other aspects will be more subtle and less explicit. Students will have developed ideas about...size of family, the relative value of boys and girls as children, the proper age of marriage....They will have learned through their socialization...what some of the advantages and disadvantages are of migrating...(Population Education in Asia: A Source Book, UNESCO Office for Education in Asia, Bangkok, 1975, part 2, p.13)

(5) Contextual paradigm:

A representation or a model of a theory or an idea which takes into account the total context--involving both the extrinsic and intrinsic factors which influence the development of the theory or the principle.

(6) Decision-making:

A method whereby a situation is studied, problems are identified and alternative solutions to the problem are considered before a course of action with intent to execute is formulated.

(7) Conceptual framework:

The main ideas arranged as to sequence and scope for teaching a unit or area of study.

(8) Parameter:

In general, any measure of function of a hypothetical and perhaps infinite population.

(9) Perception:

Awareness to external objects, conditions, relationships as a result of sensory stimulation.

(10) Content analysis:

A detailed evaluation and appraisal of the manifest and latent content of various types of communications used in curriculum research.

(11) Schema:

A drawing, sketch or diagram, preliminary to more detailed representation.

(12) Model:

A pattern of something to be reproduced, a graphic or three dimensional scale representation of an object, principle or idea. A set of interrelated factors or variables which are symbolic of a social system.

Conceptual Model: A likeness that aids one in understanding a structure or a process--when the phenomena studied could otherwise be indescribable or incomprehensible.

(13) Culture:

The aggregate of the social, ethical, intellectual, artistic, governmental and industrial attainments. Charac-

teristics of a group, state or nation--includes ideas, concepts, institutions, associations and material objects.

(14) Pedagogy:

The art, practice or profession of teaching.

Ref. (5) to (14): Dictionary of Education, Carter V. Good, 1973, Third Ed.

(15) Theory:

A general statement of relationship among facts, classified or generalized into concepts. It is more than a structure; it is an explanation of how a structure works. Theory guides and relates to the whole body of scientific inquiry. (Curriculum Materials Analysis System (CMAS), Social Science Education Consortium, Boulder, Colorado, 1971)

(16) Discipline:

A specific body of teachable knowledge with its own background of education, training, procedures, methods and content areas.

(17) Multidisciplinary:

Juxtaposition of various disciplines, sometimes with no apparent connection between them. e.g.: music + mathematics + history.

(18) Pluridisciplinary:

Juxtaposition of disciplines assumed to be more or less related. e.g.: mathematics + physics, or French + Latin + Greek: "classical humanities" in France.

(19) Interdisciplinary:

An adjective describing the interaction among two or more different disciplines. This interaction may range from simple communication of ideas to the mutual integration of organizing concepts, methodology, procedures, epistemology, terminology, data, and organization of research and education in a fairly large field. An interdisciplinary group consists of persons trained in different fields of knowledge (disciplines) with different concepts, methods, and data and terms organized into a common effort on a common problem with continuous intercommunication among the participants from different disciplines.

(20) Transdisciplinary:

Establishing a common system of axioms for a set of disciplines (e.g. anthropology considered as "the science of man and his accomplishment"). A basic continuous theme running through a set of disciplines.

Ref. (16)-(20): Interdisciplinarity: Problems of Teaching and Research in Universities. Center for Educational Research and Innovation (CERI), OCED, 1972, p. 27

1.2. Introduction to Population Education as a field of inquiry:

With the recognition of population as a significant factor affecting the quality of human life, there is a growing awareness among nations that a study of population parameters, with their socio-economic and ecological ramifications should form a relevant

part of the curriculum at all levels of education. Population is not an isolated variable. It operates within a complex of inter-relationships and interactions that exists between the demographic and non-demographic variables affecting the lives of people. It is a controversial area with various viewpoints and requires citizen understanding, support and participation for policy formulations in the area. It is becoming increasingly evident that population policies will not be able to achieve their goals until the populace is made aware of the dynamics of the human population phenomena and its impact on the realities of daily life.

One of the means to enhance public understanding in social issues is through education. Specific attention to population concerns is now becoming a part of school curricula in many parts of the world. The term used to identify this curriculum is "Population Education", which has attained a global character through the collaborative efforts at the international and national levels in several countries (Wayland, 1971a). Seminars in India (NCERT, 1969; FPAI, 1969; Rao, 1974), the Philippines, other Asian, African and Latin American countries (Burleson, 1974), UNESCO regional workshop in 1970 and Population Reference Bureau workshop in 1970 in the U.S., strongly emphasize the need for such an educational program at all levels of education, including formal, non-formal and teacher education.

In fact, Population Education, divested of its political flavor, began as a serious enquiry into the causes and consequences of the

impact of population changes, as its reverberations appeared to threaten the conditions of life on earth. Though a global phenomena, the epicenter of this impact has been the developing countries, where the concern is due to the rapid growth of population.

1.2.1. The population situation:

The population picture varies among countries, and the interplay between population and other factors, as they affect the quality of life is also different. Avabai Wadia (1971, 1974a, 1974b) notes that in those developing countries that are striving to promote rapid economic and social development, the rate of population increase and the age structure has been such as to hinder the attainment of developmental goals. In the industrialized countries where the rate of population increase is low, the significance of this limited growth is magnified by the per capita consumption and the life styles of highly technological societies, with the associated impact on the natural and social environment. This has added a new dimension to the human population in terms of environment.

It is being increasingly emphasized, as is expressed by the Commission on Population Growth and American Future (1972), that it is not the quantitative aspect of population which is of great concern, but the quality of human population which becomes the focal point in the understanding of the population phenomena. Wadia, in this context, advocates a broad based

educational approach which should also include the conservation of environment, natural resources and human value.

Another major population phenomena occurring rapidly in both developed and developing countries is swift and massive urbanization. The sourcebook of Population Education prepared by UNESCO (1975) points to this acceleration of rural to urban migration and related issues of education, literacy, religion, ethnic patterns, life styles, problems of slums, poverty and growing maldistribution, as areas of great concern both in the developed and developing countries.

1.2.2. Family planning programs and Population Education:

As a public response to the concern about rapid population growth and urbanization, large numbers of developing countries have adopted national family planning and health programs, including expanded educational opportunities. During the nineteen fifties and the sixties, in their initial period, family planning information activities tended to oversimplify the complex issues, and centered mainly on family welfare rather than broader population issues. Sarkar (1974, p. 29), a critic of the narrow clinical approach to these programs, puts this view effectively in the Indian context:

Population policy for most people, including the policy makers, usually signifies a clinical effort to prevent births...A population policy should mean so very much more than a clinical effort. It should be a policy about education, employment, ecology, about the status of women and their opportunities, about instilling confidence in the society that progress is possible and desirable. Population policy also touches and is affected by tax law,

the law of inheritance, social service allocations, the urban-rural balance of development, and many other areas of economic and social policy. A clinical policy covers very little of these facets.

In view of these observations, efforts have begun in recent years to look 'beyond family planning' (Burlison, 1972), and broaden the concept of population policies to include a wider variety of issues. Educational policies in population matters have been affected by these developments. Keehn (1973) in tracing this relationship, observes that in recent years a more open-ended approach has developed in the family planning activities, in the form of 'Information, Education and Communication (IEC), through the mass media. There is more concern with a combination of means to achieve better quality of life, including, but not limited to the adoption of family planning. There is an effort to integrate planning of education with developmental efforts in the field of health, agriculture, community development, social welfare, and an emphasis on family planning as it fits within the total context. The educational activities have become a significant aspect of these programs. However, most of these are directed toward the adult population already in the reproductive age and mainly focus on the transmission of information on family planning issues.

With 45 percent of the population below 15 years of age in the developing countries, family planning personnel, developmental planners, decision-makers and educators are becoming aware to better educate the younger generation (FPAI, 1968,

1969, 1972; IPPF, 1970; NCERT, 1969, 1972; PRB, 1971) in population matters. The formal educational system is perceived to be an institution which might best initiate understandings in this area. Educators are thus drawn into the movement and with their concern for relevancy in education are becoming involved in the formulation of an educational policy in population matters. The idea of Population Education is thus being conceived as a part of the population policy as well as the educational policy of a country in view of the role of education to respond to the total socio-economic situation in the overall developmental efforts. The seventies reflect this educational response through the national programs being formulated in the developing countries for the younger generation and for teacher educators.

Both population decline and population growth at different times and response to different conditions have been offered as justification for education about population matters in the formal educational curriculum in the western countries. The declining rates of population growth in the forties in the U.S. and western Europe motivated demographers Lorimar and Osborn (1943) to recommend inclusion of population as content area in the curriculum. Twenty years later, demographers again urged a concern for rapid population growth both in the industrialized and developing worlds (Hauser, 1962), by which time the perception of the problem had changed. No apparent modifications in

the curriculum occurred as a result of either of these recommendations. The sixties were marked by an awakening towards relevancy in education, and to the environmental issues. In the seventies population is seen closely related to the environmental issues. Population literacy is being seen as an essential aspect of citizenship education in social responsibility. The idea of Population Education is thus being revived by educators on educational grounds in the U.S. (Viederman, 1972a).

1.2.3. The World Population Year:

Emergence of population as a major issue on the world agenda was highlighted by the declaration of 1974 as the World Population Year, and the convention of the World Population Conference in Bucharest, Rumania in August, 1974. The World Population Plan of Action drawn at the conference, also, addressed itself to the need for the development of educational programs, thus:

Educational institutions in all countries should be encouraged to expand their curricula to include a study of population dynamics and policies, including, where appropriate, family life, responsible parenthood, and the relationship of population dynamics to socio-economic development, and international relations. (Para. 87)

1.2.4. Issues of the Seventies and Population Education:

A brief review of the various issues that have emerged during the seventies at the global level is presented to define the broad international context in which Population Education is taking shape as a 'worldwide curricular innovation.'

Population, food, environment, resources, energy, and consumption have attained a global stature in the seventies in the context of an interdependent world. These have dominated the agenda of various forums, notably the U.N., as was evident from the many international conferences and seminars held during the seventies (Editorial Research Reports, 1974). U.N. Conference of Human Environment, Stockholm, June, 1972; World Population Conference, Bucharest, August, 1974; World Food Conference, Rome, November, 1974; and, the International Women's Conference in Mexico City in 1975 under the auspices of International Women's Year (United Nations, 1975) are evidence to the growing worldwide awareness toward these issues.

The role of education as a modernizing force in the developmental efforts was recognized and reinforced by declaring 1970 as the International Education Year by the U.N. The educational sector of various developmental programs was strengthened as a result of this and programs and innovations were proposed to meet the educational needs of modern life. The basic philosophy and the goals of these global events provide a framework for the planning and evaluation of future developmental and educational policies and programs.

1.3. The emergence of Population Education as an educational concept:

Population content, traditionally, has been included in the educational curriculum in areas such as, history, geography, biology

and other disciplines, but it has not typically been a part of a systematic effort to understand the implications of the population phenomena for the individual and his society. The concern for instituting educational programs focusing on conscious population learning is essentially a development which began in the midsixties, and did not gain momentum until the early 1970's. It marks the emergence of a curricular activity designed by educators for educational ends, leading to an appreciation and an understanding which will provide a foundation for decisions the student will be making in population matters in the future. This educational response has taken the form of a curriculum innovation which has come to be known as 'Population Education'. The agenda of this educational program is different from the communication and transmission efforts of the family planning programs, as is emphasized by Viederman (1973a, p.7):

Although school population education may be seen as part of a total population, information, education, and communication effort, it is important that it also be viewed as an integral part of the educational system, supportive of and complemented by other activities therein. To think of school population education only as a part of population information, education and communication efforts is to distort gravely the nature of the field.

The results of the educational program are hoped to be achieved through improvement in educational planning and administration, the incorporation of relevant educational contents and methodologies, and the utilization of new educational means and techniques (UNESCO, 1972).

Mehta (1971, p.55) puts Population Education in the perspective of the 1970's as follows:

Education is no longer simply concerned with the earning of a living or being a 'good citizen', it is now much more concerned with the quality of life—one's own and that of the people. In recent decades, the story of curriculum development has been largely the account of a struggle to keep the curriculum up-to-date and relevant— (the new physics and the new social studies). It seems that Population Education and ecology will be banner headlines in the 1970's.

1.4. Need for a theoretical frame of reference for the population educator and the curriculum developer:

Most of the literature and training in Population Education is either confined to a narrow view of the field or focused on curricular and methodological approaches without taking into consideration the total educational perspective, and the various factors involved in introducing Population Education in the formal curriculum. The short history of the evolving concept of Population Education around the world, with diverse points of views and approaches, makes a confused state of affairs for the population educators and teachers who are forced to assume new roles and responsibilities involved in a Population Education curriculum. Turner and Wileman (1974) observe that insufficient attention has been paid to how the educator views his own role, assesses his own attitudes and reviews the methods he uses and interprets his knowledge and understandings.

The dilemma of an educator is expressed very aptly by Sargeant (1974, p.5) as follows:

Population Education is probably one of the most complex types of education one could embark upon—primarily for the supreme requirement for the educator to be a 'Specialist Generalist'.

The integrative approach to education in this curriculum innovation is for the person who has sure knowledge of at least one major area and an insight and broad foundation and skills in others. There is a need for expertise in Population Education as curriculum developers, teachers, educators, and community program personnel. The need arises from the all inclusive interdisciplinary nature of Population Education, which conceives education as a life-long process in all the various educational settings of life, imparting knowledge, skills, moulding attitudes and behavior toward personal and social events, and assisting individuals in making rational decisions regarding population related issues. Educators in this context will need all the understanding of psycho-social and cultural processes operating in the society along with the knowledge of the interrelationships of population dynamics with the social and natural environment. The role of education and their own role will have to be evaluated in this context (Sargeant, 1974).

It is being noted that very few institutions of higher learning are providing broad cross disciplinary and comprehensive backgrounds in their curricula. In this situation, the efforts have been directed to provide the population educators with the necessary background knowledge in terms of curriculum development and teacher training through short term training programs and material development. Recently these efforts are focusing on a theoretical and conceptual study of Population Education, in order to appraise its philosophical, curricular, pedagogical and teacher education

implications, and to develop a unified frame of reference. Preparation of source books (UNESCO, 1975), and the international study on the conceptualization and methodology of Population Education (Population Education, A Contemporary Concern, ISCOMPE, UNESCO, 1978) represent efforts in this direction.

An attempt was made in the present research to analyze this interdisciplinary and multidisciplinary curricular concept as to the specifics of what Population Education is or could be, the broader context, including the events and forces contributing in its evolution and development. The intent was to provide educators, curriculum planners and teachers with a theoretical frame of reference and guidelines for curriculum development and teacher training within which they can assess the various dimensions of the concept, their own knowledge, attitudes and behavior and their role in this educational program. The present study represents one of the several approaches towards conceptualizing a theory of Population Education in its curricular and pedagogical perspectives.

1.5. Overview of the study:

Population Education is a curricular innovation of the seventies. It has a short history. Most of the work related to formal educational programs is being done by experts and individuals involved with the international, governmental and/or private agencies. Research is being taken up in some universities in the 'knowledge gap' areas. The involvement of teachers and educators is confined to inservice training and workshops of short durations. In some

American universities, such as the University of North Carolina, graduate students have written term papers on different aspects of Population Education. The efforts have been disjointed and fragmented. Population Education, A Contemporary Concern, ISCOMPE, UNESCO, 1978, represents the only comprehensive conceptual study of the concept at the international level.

The present study is one of the first conceptual studies taken up by a student of education at the doctoral level. The theory and practice of the process of curriculum development in Population Education has been occurring simultaneously at the operational and conceptual level. The literature is full of these discussions expressing different points of view, relating Population Education to other overlapping curricular areas. There was a need to analyze, organize and synthesize these within a total theoretical perspective in order to make available to the educators, curriculum specialists and teachers a source for the guidelines and criteria for curriculum development and introduce them to the emerging trends in education through a coherent theme of Population Education. To this extent an attempt has been made by the researcher to develop a Source-book for curriculum development in Population Education.

The following section gives an overview of the contents of the various chapters:

Chapter 1: The purpose and rationale of the study and its specific objectives were formulated in Chapter 1 by examining the global events and factors which led to the educational programs in

Population Education. Some of the important terms and phrases were defined.

Chapter 2: The literature in Population Education was reviewed from 1965 (marking the beginnings of worldwide programs) to 1978, with a focus on programs being developed in India, the Philippines, the U.S. and by the UNESCO.

Chapter 3: Chapter 3 describes the methodology adopted for the research, including the four stages of the analytical design. This chapter established the need for a 'contextual paradigm' as a significant aspect of methodology.

Chapter 4: Various population parameters relevant to population are defined within a population perspective. This was done through the explanation of population terms and phrases and the factors related to the population phenomena. An educational perspective was drawn by highlighting the major educational and curricular changes of the past decade and the future emerging trends in the developing and developed countries. A broad 'contextual paradigm' was thus laid out providing both population and educational perspectives against which the analysis of the concept of Population Education assumed and evolved its meaning.

Chapter 5: This chapter was devoted to the analysis in terms of the rationales, definitions, scope and content of Population Education in different situations. Knowledge base issues were identified.

Chapter 6: Chapter 6 presents the various approaches to the formulation and organization of the knowledge base.

Chapter 7: For organizational purposes Chapter 7 was divided into two sections. Section I was devoted to the theory and practice of Population Education which examined the operational and theoretical principles of curriculum development through illustrations from programs being developed in India, the Philippines, the U.S. and UNESCO. Section II was devoted to the actual mechanics of curriculum development in terms of the sequential steps involved and the systems perspective within which the process is conceptualized. The 'Wayland Model' was formulated to develop the systems perspective.

Chapter 8: The validity of the concept was examined with reference to its present status, needs and expected future developments. The educational implications were discussed with a focus on teacher education as illustrated through the analysis of programs being developed in India, the Philippines and the U.S., the role of universities/colleges of education in Population Education, and highlighting the relationship between interdisciplinarity and Population Education to establish the direction of future trends and needs in this area. A suggested list of recommendations for further research concluded the chapter.

CHAPTER 2: REVIEW OF THE LITERATURE

- 2.1. Initiation of Population Education in developing countries
 - 2.1.1. The role of the UNESCO
 - 2.1.2. National and international seminars
- 2.2. Overview of events and activities, 1965-1978:
A Global Perspective
- 2.3. Curricular strategies and approaches
 - 2.3.1. General features of the curricular approaches
 - 2.3.2. UNESCO programs and projects
 - 2.3.3. Population Education in India
 - 2.3.4. Population Education in the Philippines
 - 2.3.5. Population Education in the U.S.
 - 2.3.6. Non-formal Population Education programs
- 2.4. Guidelines for curriculum development and teacher education
- 2.5. Summary

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of the review of the literature was threefold:

1. To trace the major events and activities in a historical perspective, from 1965 to 1978, at the international and national level, in formulating curricular strategies in the formal educational system;
2. to identify the evolving and developing general characteristics of the various curricular programs and projects that are being developed in different regions of the world, and
3. to review the curricular programs and projects underway in India, the Philippines, the U.S. and the UNESCO with an emphasis on teacher education implications.

2.1. Initiation of Population Education in developing countries:

While global interest in Population Education began in the mid-sixties, formal education programs were initiated in some Asian countries. The first national seminar on Population Education was held in India in 1969, which led to the creation of a "Population Education Cell" in the National Council of Education Research and Training (NCERT) of the Ministry of Education in 1970, with the responsibility of curriculum development, teacher training, research and program coordination. Subsequently other developing countries such as the Philippines and the Republic of Korea began programs in 1970. Experimental programs also began in some Latin American countries by the late nineteen sixties (UNESCO, ISCOMPE, 1976-draft copy).

2.1.1. The role of the UNESCO: The UNESCO as the UN agency concerned with formal education program became involved over the same period. It held its first consultation of interested scholars in 1967 comprised of a special committee of experts, on the definition of UNESCO's responsibilities in the field of Population Education (UNESCO, 1972; Wayland, 1969). During its subsequent meeting in 1969, it was noted that education in population was a new concept and no acceptable model or necessary experience was available either at the UNESCO or in the industrialized countries. Problems concerning the definition and delineation of this new concept, development of curricula, preparation of instructional materials, teacher training and evaluation were identified as major issues to be resolved. In the absence of a model, population educators had to innovate from different circumstances. A major workshop to develop a model was held in 1970 under the auspices of UNESCO Regional Office for Education in Bangkok, which provided some basic guidelines for curricular strategies and approaches in Population Education for the Asian countries. A regional office in Santiago also held two seminars in 1970 and 1971 on Population Education and sex education respectively (UNESCO, ISCOMPE, 1976-draft copy).

The unique nature of this educational innovation is expressed by Wayland (1971a, p.2) as follows:

Within a short period of time, a curriculum innovation has moved to the level of national attention in a number of countries in quite different parts of the world. Population education is not a curricular pattern being exported from

technologically developed societies to developing countries. Furthermore, this is an educational development which is occurring in many places within the same period of time in spite of the fact that no model for such an innovation exists.

Countries involved in developing Population Education programs are India, the Philippines, Chile, Nepal, South Korea, Taiwan, Egypt, Colombia, Malaysia, Thailand, Sri Lanka and the U.S.A. Interest is also developing among some African countries.

2.1.2. National and international seminars: The initial steps in developing Population Education programs at the national level were directed towards educating the educators, policy makers, governmental officials, and other key personnel who were involved in the planning of these programs. The strategy was a series of seminars and workshops at the national and international levels, such as the National seminars on Population Education in India, (FPAI, 1969, 1972; NCERT, 1969, 1972; Rao, 1974), the Philippines (Phil. Min. of Edn. 1972, 1973), and the U.S. (PRB, 1971; Wayland, 1971a), and the Regional Workshops (Middleton, 1974; UNESCO, 1970, 1974 and 1975; EWCI, 1973, 1974a, 1974b) at the international level. This was done with the collaboration of national and international agencies. These deliberations focused on:

- a. The analysis of the world population situation and its consequences for the future development of society,
- b. impact of demographic change on the educational system itself,
- c. role of education in the overall developmental policy, and need for population Education at all levels, including school and out-of-school populace,
- d. specification of goals and objectives and implementation strategies,

- e. identification of curricular, pedagogical and research needs,
- f. content analysis of school curricula and preparation of model curricula for Population Education,
- g. strategies for teacher training program,
- h. preparation and dissemination of reference material, and the
- i. role of international agencies.

A review of school Population Education curricula being developed in several countries indicates a diversity of approaches and emphases. Most of the curricula that were developed initially were at a high level of abstraction from the student's own life situation, emphasizing mainly the macro level population issues, with little attention to the individual and his life cycle decisions, affecting his own and cumulatively his nation's situation. Individual issues, where included, usually focused on the small family norm. The lack of a definition and conceptualization of these programs and their goals led to several different perspectives in viewing the same programs. Thus Population Education programs in these perspectives were identified as, 'family planning for children' or 'demography for children', or 'sex-education', as is evident from the various viewpoints expressed during during the National Seminar in India (NCERT, 1969) and the UNESCO regional workshop (1970).

In time, through national and international efforts, the definition and meaning of Population Education is broadening, and what began as a school education program in response to 'remedy' a defined set of population problems like population growth and urbanization, is becoming through the early 1970's a

much broader based educational program. Burleson (1974) and the ISCOMPE (UNESCO, 1976—first draft) in their study of world wide programs have analyzed the developing trends in the field. It was observed by ISCOMPE that in time emphasis is incorporating other related concepts and is shifting.

1. from family planning and/or demography oriented programs for children to broader understandings of population related events and processes relevant to the life of learners, and gradual emergence of the interdisciplinary concept of population studies;

2. from fertility management, or responsible parenthood, to informed and conscious decision making across a wider spectrum of population related life cycle events, with a focus on the learner and his world;

3. from an academic concern for macro-level population processes to a concern for the reciprocal interrelationship and interaction of these processes upon the well being of the individual and the society of which he/she is a member; and,

4. from a preoccupation with standard of living to a focus upon quality of life and its improvement, individually and nationally, through informed and conscious decision-making in population related matters.

5. The scope and meaning of out-of-school Population Education programs also broadened and widened to incorporate population related life cycle issues and the interrelationship between individual and society.

6. There is a growing realization of the necessity to evaluate the strengths and the weaknesses of the various educational settings--both school and out-of-school, in meeting certain goals and objectives.

7. As educators have come to the forefront, educational goals are being stated in terms that are perceived to be responsive not only to national goals, but also to institutional goals, and learning requirements that are unique to educational process and system.

8. There has been a gradual expansion of the popular definition of population to include greater attention to the processes of mortality, migration and related issues, besides the earlier 'crisis' orientation of the programs. This has resulted in the initiation of Population Education programs in countries which do not define their national problems in terms of growth, and do not have explicit population policies.

9. Planning and development of Population Education programs is gradually being viewed in the perspective of a 'life long' education, with the growing realization that education and schooling are not synonymous. For population and general educational goals, planning and integrating a 'learning system' issues are being confronted.

The special feature of Population Education programs all over the world is the close collaboration between governmental, non-governmental and international agencies. In addition to the

efforts of UNESCO, other United Nations agencies including FAO, ILO, WHO, UNICEF, UNFPA, agencies like the World Bank, Pathfinder Fund, USAID, the Swedish International Development Authority, Columbo Plan, IPPF and private organizations functioning on an international level, such as the Ford Foundation, Rockefeller Foundation, The Population Council, World Education--are some of the agencies involved in Population Education activities in various capacities.

The major focus of UNESCO is in the area of formal education. The United Nations Fund for Population Activities (UNFPA) is serving as the agency for funding many of the UNESCO programs, and national programs in several countries. FAO, ILO, WHO and UNICEF have been primarily interested in programs addressed to out-of-school sector. Other agencies have provided technical and financial assistance, through personnel, information and funding.

2.2. Overview of events and activities--1965-1978: A Global Perspective:

Table 2.1. has been developed by the researcher to provide an overview of the events and activities in Population Education since 1965 until 1978, highlighting the major steps and collaborative efforts at the international and national levels, in resolving some of the curricular and pedagogical issues in the area around the world.

These events can be divided into three broad phases:

TABLE 2

AN OVERVIEW OF POPULATION EDUCATION ACTIVITIES (1965-1978)
CURRICULUM STRATEGIES AND PROGRAMS: MAJOR MILESTONES
(A GLOBAL PERSPECTIVE—ASIAN EMPHASIS)

Year	UNESCO/INTERNATIONAL AGENCIES	INDIA	U.S.A.	PHILIPPINES
1965	UNESCO programs in family planning 'Information-Communication-Education' through mass media	Exploratory phase: Role of education in promoting socio-economic goals: efforts at the government level	Population Council: Overseas Project in Population Education—Exploratory phase Preparation of instructional units	
1967 1968	1967: UNESCO; Consultative meeting emphasizes school program in population.	Family Planning Association of India: Memorandum to the Maharashtra State (1968), to introduce Population Education for younger generation in the formal education		
1969	UNESCO Conference—Paris: Consultation on Population Education Mission of experts sent to Asian countries.	National seminars on Population Education (NCERT, FPAI, CHEE) —in search of a model. Reports published, widely disseminated.	Appointment of a special staff for Population Education activities in the Population Council	Initiation of interest
1970 Internat'l Education Year	UNESCO Regional Workshop on population and family education. A Curriculum Model for the Asian Region Seminar in Latin America—UNESCO Regional Office in L.A.	Establishment of Population Education cell in the NCERT: National program in Population Education, Workshops at the state level for teachers, Handbook for secondary school teachers.	Overseas programs in universities Teacher workshop by Population Reference Bureau <u>Population Bulletin</u> : Special issue on Population Education	Seminars to develop curriculum materials and teacher guides—a beginning of national program in Population Education
1971	IPPF—SEAO Regional Conference: Asian Institute for Teacher Educators—Philippines (sponsored by UNESCO) Publication of the Report of the Asian Regional Workshop—UNESCO and draft instructional materials <u>Book I: Science/Mathematics</u> <u>Book II: Social Studies</u> Other international agencies: FAO, WHO, IPPF, World Education, Pathfinder Fund....	FPAI Conference on Population Education for Younger Generation NCERT projects and publications: —Preparation of <u>Bibliography</u> — <u>Plug Points for Population Education in School Curricula</u> — <u>Indian Population Situation</u> State level activities: workshops and guidebook preparation for teachers	Several experimental projects underway— —Survey of art in Population Education in Secondary Schools— Population Reference Bureau —Instructional Unit Projects Indiana University and others.... National Conference on Population Education—PRB, Center for Population and Environmental Education, School of Education, North Carolina University—established for Population Education programs—including Curriculum Development, Teacher Education and Overseas Project	UNESCO-UNFPA: Five year project in developing Population Education program (PEP)—planning of a national pilot project in curriculum planning and teacher education
1972 Environmental Conference, Stockholm	East-West Communication Center, Honolulu: Workshop for Population Education Program development Specialist, Activities and material publications of other international agencies. <u>Report of the Population Education Instructional Materials Development Project for Teacher Educators</u> —Asian Institute for Teacher Educators, University of Philippines (sponsored by UNESCO)	NCERT: National Conference on Population Education: Problems of Implementation, State level activities, NCERT publications: — <u>Population Education—Selected Readings</u> , <u>Handbook for Teachers—World Confederation of the Organization of Teaching Profession—India Project.</u>	Publication of <u>The Proceedings of the National Conference on Population Education—PRB</u> Population and the American Future, Report of the Commission on Population and the American Future; <u>Social Education</u> : April 1972. Special issue on Population Education	Involvement of colleges and universities in the Population Education pilot project.* *See UNESCO activities.
1973	East-West Communication Institute: Workshop on Population Education for Asian countries UNESCO—Regional Office of Education—Bangkok. <u>A Source Book on Population Education for the Asian Region—Trial edn.</u>	State level seminars—sponsored by NCERT, FPAI and other agencies* NCERT publications: — <u>Nutrition and Population Education—A Resource Book for Teachers</u> *(For state level seminars—see— <u>Population Education, A Guide to Curriculum and Teacher Education</u> —Gopal Rao, 1974 pp. 27,28,29)	Several publications of reference materials by PRB, Zero Population Growth and Population Council, Overseas projects of several universities, Instructional packages, newsletters, teaching notes, T. V. lessons and collection and dissemination of information on Population Education— projects of the Population Council and other agencies, Teacher guides and books on Population Education—Teachers College, Columbia University.	Population Education Program, Dept. of Education and Culture Preparation of teacher's guides in different school subjects at elementary and high school level, <u>Preparing Tomorrow's Parents Today</u> , the Population Education Program, Philippines (A Brochure)

Year	UNESCO/INTERNATIONAL AGENCIES	INDIA	U.S.A.	PHILIPPINES
1974 World Populat'n Year World Populat'n Conference Rome	International Conference on Population Education in the Asian Region. Development Academy of Philippines sponsored by the East-West Center, East-West Center workshop on models of instruction for trainers of Population Education staff, Meetings of experts on the role of University faculties/Colleges of Education in Population Education. UNESCO Regional Conf., <u>Population Education: Problems and Perspectives</u> . International Bureau of Education, UNESCO, Paris, <u>Population, Family Life and Resources: A Population Curriculum Guide</u> . FAO, Rome	National Seminar on Population Education, Population Studies Center under the auspices of WPIY—curriculum strategies in higher education. (S.V. University) NCERT publications: Mehta, T.S. <u>Population Education for Teachers</u> . A draft syllabus. Other publications: Gopal, Rao D., <u>Population Education—A Guide to Curriculum and Teacher Education</u> . Sharma, R.C., <u>Population Trends and Resources in India—A Source Book for Population Education</u> . Mascarenhas, M.M., <u>Population Education for Quality of Life</u> . Family Welfare Center, Bangalore. <u>Population Education: Guide Book for Secondary School Teachers</u> , Central Health Education Bureau, Govt. of India. <u>Population Education for Teachers</u> , NCERT.	Population Education Program for the Baltimore City public schools Individual efforts, Population Education courses at the college level, <u>Teaching Notes</u> in Population Education, Population Education content in secondary school curricula, a survey under the sponsorship of the Population Council, Proposal for International Communication Network in Population Education, <u>Building Population Program in Universities—A Brief Guide for Policy Makers</u> —by Rolf P. Lynton, University of North Carolina, Chapel Hill, A Structure for Population Education, by Mary Lane and Ralph Wileman, School of Education, N.C.U., <u>Problem of Introducing Population Education in College</u> , The Population Activist's Handbook, Population Institute. American Home Economics Association Publications	<u>Population Education, A Curriculum For Higher Education</u> , FPOP and Colombo Plan. Prepared by the Curriculum Committee of FPOP, Continuation of teacher education programs, Curriculum guides for teachers for elementary and high schools Drafts—tried at school level

TABLE 2.1

POPULATION EDUCATION ACTIVITIES (1965-1978):
REGIONS AND PROGRAMS: MAJOR MILESTONES
FROM A PERSPECTIVE--ASIAN EMPHASIS)

COUNTRIES	INDIA	U.S.A.	PHILIPPINES	OTHER
Planning in India	Exploratory phase: Role of education in promoting socio-economic goals: efforts at the government level	Population Council: Overseas Project in Population Education--Exploratory phase Preparation of instructional units		
Five meet- ing program in	Family Planning Association of India: Memorandum to the Maharashtra State (1968), to introduce Population Education for younger generation in the formal education			
Consultation with Asian	National seminars on Population Education (NCERT, FPPI, CHEB) --in search of a model. Reports published, widely disseminated.	Appointment of a special staff for Population Education activities in the Population Council	Initiation of interest	Chile, Columbia, Indonesia Initiation of interest
Population Education in Asia -- UNESCO	Establishment of Population Education cell in the NCERT: National program in Population Education, Workshops at the state level for teachers, Handbook for secondary school teachers.	Overseas programs in universities Teacher workshop by Population Reference Bureau <u>Population Bulletin</u> : Special issue on Population Education	Seminars to develop curriculum materials and teacher guides--a beginning of national program in Population Education	South Korea, Taiwan, U.K., Scandinavia
Reference: for Educa- tion by of the UNESCO materials and guides: Education,	FPPI Conference on Population Education for Younger Generation NCERT projects and publications: --Preparation of <u>Bibliography</u> -- <u>Flag Points for Population Education in School Curricula</u> -- <u>Indian Population Situation</u> State level activities: workshops and guidebook preparation for teachers	Several experimental projects underway-- --Survey of art in Population Education in Secondary Schools-- Population Reference Bureau --Instructional Unit Projects Indiana University and others...., National Conference on Population Education--PRB, Center for Population and Environmental Education, School of Education, North Carolina University--established for Population Education programs--including Curriculum Development, Teacher Education and Overseas Project	UNESCO-UNFPA: Five year project in developing Population Education program (FEP)--planning of a national pilot project in curriculum planning and teacher education	National Conference Malaysia
Center, Population Education Development Teacher (UNESCO)	NCERT: National Conference on Population Education: Problems of Implementation, State level activities, NCERT publications: -- <u>Population Education--Selected Readings</u> , <u>Handbook for Teachers--World Confederation of the Organization of Teaching Profession--India Project.</u>	Publication of <u>The Proceedings of the National Conference on Population Education--PRB</u> Population and the American Future, Report of the Commission on Population and the American Future; <u>Social Education</u> : April 1972. Special issue on Population Education	Involvement of colleges and universities in the Population Education pilot project.* *See UNESCO activities.	National Seminar--Iran
Institute: Population Education Book on The Asian	State level seminars--sponsored by NCERT, FPPI and other agencies* NCERT publications: -- <u>Nutrition and Population Education--A Resource Book for Teachers</u> *(For state level seminars--see-- <u>Population Education, A Guide to Curriculum and Teacher Education--Gopal Rao, 1974 pp. 27,28,29</u>)	Several publications of reference materials by PRB, Zero Population Growth and Population Council, Overseas projects of several universities, Instructional packages, newsletters, teaching notes, T. V. lessons and collection and dissemination of information on Population Education--projects of the Population Council and other agencies, Teacher guides and books on Population Education--Teachers College, Columbia University.	Population Education Program, Dept. of Education and Culture Preparation of teacher's guides in different school subjects at elementary and high school level, <u>Preparing Tomorrow's Parents Today</u> , the Population Education Program, Philippines (A Brochure)	Pakistan

COUNTRIES	INDIA	U.S.A.	PHILIPPINES	OTHER
Population Education Program of the East- Asian Staff, Education Bureau Resource Guide.	National Seminar on Population Education, Population Studies Center under the auspices of WPI--curriculum strategies in higher education. (S.V. University) NCERT publications: Mehta, T.S. <u>Population Education for Teachers</u> . A draft syllabus. Other publications: Gopal, Rao D., <u>Population Education--A Guide to Curriculum and Teacher Education</u> . Sharma, R.C., <u>Population Trends and Resources in India--A Source Book for Population Education</u> . Mascarenhas, M.M., <u>Population Education for Quality of Life</u> . Family Welfare Center, Bangalore. <u>Population Education: Guide Book for Secondary School Teachers</u> , Central Health Education Bureau, Govt. of India.	Population Education Program for the Baltimore City public schools Individual efforts, Population Education courses at the college level, <u>Teaching Notes</u> in Population Education, Population Education content in secondary school curricula, a survey under the sponsorship of the Population Council, Proposal for International Communication Network in Population Education, <u>Building Population Program in Universities--a Brief Guide for Policy Makers</u> --by Rolf P. Lynton, University of North Carolina, Chapel Hill, <u>A Structure for Population Education</u> , by Mary Lane and Ralph Wileman, School of Education, N.C.U., <u>Problem of Introducing Population Educa-</u>	<u>Population Education, A Curriculum for Higher Education</u> , FPPI and Colombo Plan. Prepared by the Curriculum Committee of FPPI, Continuation of teacher education programs, Curriculum guides for teachers for elementary and high schools Drafts--tried at school level	<u>Family Planning Population Education Issues in Australia</u> Proceedings and discussions by R. H. Cochran

	<p>Publication of the <u>Report of the Asian Regional Workshop—UNESCO</u> and draft instructional materials</p> <p><u>Book I: Science/Mathematics</u> <u>Book II: Social Studies</u></p> <p>Other international agencies: FAO, WHO, IPPF, World Education, Pathfinder Fund....</p>	<p>—<u>Plus Points for Population Education in School Curricula</u> —<u>Indian Population Situation</u></p> <p>State level activities: workshops and guidebook preparation for teachers</p>	<p>Instructional Unit Projects Indiana University and others....</p> <p>National Conference on Population Education—PRB, Center for Population and Environmental Education, School of Education, North Carolina University—established for Population Education programs—including Curriculum Development, Teacher Education and Overseas Project</p>	
1972	<p>East-West Communication Center, Honolulu: Workshop for Population Education Program development Specialist, Activities and material publications of other international agencies.</p> <p><u>Report of the Population Education Instructional Materials Development Project for Teacher Educators</u> —Asian Institute for Teacher Educators, University of Philippines (sponsored by UNESCO)</p>	<p>NCERT: National Conference on Population Education: Problems of Implementation, State level activities, NCERT publications: —<u>Population Education—Selected Readings</u>, <u>Handbook for Teachers—World Confederation of the Organization of Teaching Profession—India Project.</u></p>	<p>Publication of <u>The Proceedings of the National Conference on Population Education—PRB</u> Population and the American Future, Report of the Commission on Population and the American Future; <u>Social Education: April 1972. Special issue on Population Education</u></p>	<p>Involvement of colleges and universities in the Population Education pilot project.* *See UNESCO activities.</p>
1973	<p>East-West Communication Institute: Workshop on Population Education for Asian countries UNESCO—Regional Office of Education—Bangkok. <u>A Source Book on Population Education for the Asian Region—Trial edn.</u></p>	<p>State level seminars—sponsored by NCERT, FPAI and other agencies* NCERT publications: —<u>Nutrition and Population Education—A Resource Book for Teachers</u> *(For state level seminars—see—<u>Population Education, A Guide to Curriculum and Teacher Education—Gopal Rao, 1974 pp. 27,28,29</u>)</p>	<p>Several publications of reference materials by PRB, Zero Population Growth and Population Council, Overseas projects of several universities, Instructional packages, newsletters, teaching notes, T. V. lessons and collation and dissemination of information on Population Education—projects of the Population Council and other agencies, Teacher guides and books on Population Education—Teachers College, Columbia University.</p>	<p>Population Education Program, Dept. of Education and Culture Preparation of teacher's guides in different school subjects at elementary and high school level, <u>Preparing Tomorrow's Parents Today</u>, the Population Education Program, Philippines (A Brochure)</p>

Year	UNESCO/INTERNATIONAL AGENCIES	INDIA	U.S.A.	PHILIPPINES
1974	<p>International Conference on Population Education in the Asian Region. Development Academy of Philippines sponsored by the East-West Center, East-West Center workshop on models of instruction for trainers of Population Education staff, Meetings of experts on the role of University faculties/Colleges of Education in Population Education. UNESCO Regional Conf., <u>Population Education: Problems and Perspectives</u>. International Bureau of Education, UNESCO, Paris, <u>Population, Family Life and Resources: A Population Curriculum Guide</u>. FAO, Rome</p>	<p>National Seminar on Population Education, Population Studies Center under the auspices of NPY—curriculum strategies in higher education. (S.V. University) NCERT publications: Mehta, T.S. <u>Population Education for Teachers</u>. A draft syllabus. Other publications: Gopal, Rao D., <u>Population Education—A Guide to Curriculum and Teacher Education</u>. Sharma, R.C., <u>Population Trends and Resources in India—A Source Book for Population Education</u>. Mascarenhas, M.M., <u>Population Education for Quality of Life</u>. Family Welfare Center, Bangalore. <u>Population Education: Guide Book for Secondary School Teachers</u>, Central Health Education Bureau, Govt. of India. <u>Population Education for Teachers</u>, NCERT.</p>	<p>Population Education Program for the Baltimore City public schools Individual efforts, Population Education courses at the college level, <u>Teaching Notes in Population Education</u>, Population Education content in secondary school curricula, a survey under the sponsorship of the Population Council, Proposal for International Communication Network in Population Education, <u>Building Population Program in Universities—A Brief Guide for Policy Makers</u>—by Rolf P. Lynton, University of North Carolina, Chapel Hill, <u>A Structure for Population Education</u>, by Mary Lane and Ralph Wileman, School of Education, N.C.U., <u>Problem of Introducing Population Education in College</u>, The Population Activist's Handbook, Population Institute. American Home Economics Association Publications</p>	<p><u>Population Education, A Curriculum for Higher Education</u>, FPOP and Colombo Plan. Prepared by the Curriculum Committee of FPOP, Continuation of teacher education programs, Curriculum guides for teachers for elementary and high schools Drafts—tried at school level</p>
1975	<p><u>Population Education in Asia, A Source Book</u> UNESCO Regional Office of Education in Asia—Bangkok, <u>Training Needs in Population Education Programs</u>—Report of Asian Consultative Seminar, UNESCO Regional Office, ISCOMPE Project on International Conceptualization of Population Education—A UNFPA-UNESCO Project—Questionnaire sent to different countries and people working in Population Education</p>	<p>State level activities, publication of newsletter in Population Education, Programs of FPAI in the non-school sector, Preparation of lessons in Population Education at the governmental level, <u>Population Science—A Multidisciplinary Study</u> by Sohanlal Nagda, S.V. University A. P. India. Involvement of the Regional Colleges of Education</p>	<p><u>A Sourcebook for National Prog.</u> by Sloan R. Wayland (draft), American Home Economics Association Resource Catalog, <u>Population Education Workshop</u>—March 1975</p>	<p>Publication of Journal in Population Education: <u>Options: Bimonthly special report of the Population Center</u>. Foundation of the Philippines</p>
1976	<p><u>International Study of the Conceptualization and Methodology—Trial Draft</u></p>			
1977			<p><u>Population Education in the United States</u>, by Carl A. Huether and Susan O. Gustavus, A PRR Report, March 1977</p>	
1978	<p><u>Population Education, A Contemporary Concern</u>, ISCOMPE, UNESCO, March 1978.</p>			

NOTE: This table provides a suggestive and limited list of activities and publications and national levels, with an emphasis on Asian countries and the United States. Reports of experts and individual papers are not included. For details please see the report.

<p>Report of the Workshop—UNESCO Final materials Thematic Notes Agencies: World Education,</p>	<p>—<u>Plus Points for Population Education in School Curricula</u> —<u>Indian Population Situation</u> State level activities: workshops and guidebook preparation for teachers</p>	<p>Indiana University and others...., National Conference on Population Education—PRB, Center for Population and Environmental Education, School of Education, North Carolina University—established for Population Education programs—including Curriculum Development, Teacher Education and Overseas Project</p>		
<p>Education Center, for Population Development Literary publica- tional National</p>	<p>NCERT: National Conference on Population Education: Problems of Implementation, State level activities, NCERT publications: —<u>Population Education—Selected Readings</u>, <u>Handbook for Teachers—World Confedera- tion of the Organization of Teaching Pro- fession—India Project.</u></p>	<p>Publication of <u>The Proceedings of the National Conference on Population Education—PRB</u> Population and the American Future, Report of the Commission on Population and the American Future; <u>Social Education</u>: April 1972. Special issue on Population Education</p>	<p>Involvement of colleges and universi- ties in the Population Education pilot project.* *See UNESCO activities.</p>	<p>National Seminar—Iran</p>
<p>Population Education National Develop- ment—Teacher Education or Teacher Education Agency of (UNESCO)</p>	<p>State level seminars—sponsored by NCERT, FPAI and other agencies* NCERT publications: —<u>Nutrition and Population Education— A Resource Book for Teachers</u> *(For state level seminars—see— <u>Population Education. A Guide to Curriculum and Teacher Education— Gopal Rao, 1974 pp. 27,28,29</u>)</p>	<p>Several publications of reference materials by PRB, Zero Population Growth and Population Council, Overseas projects of several universi- ties, Instructional packages, newsletters, teaching notes, T. V. lessons and col- lection and dissemination of informa- tion on Population Education— projects of the Population Council and other agencies, Teacher guides and books on Population Education—Teachers College, Columbia University.</p>	<p>Population Education Program, Dept. of Education and Culture Preparation of teacher's guides in different school subjects at elemen- tary and high school level, <u>Preparing Tomorrow's Parents Today</u>, the Population Education Program, Philippines (A Brochure)</p>	<p>Pakistan</p>

INTERNATIONAL AGENCIES	INDIA	U.S.A.	PHILIPPINES	OTHER
<p>Conference on Popu- lation Education the Asian Academy of Education Established by the East- Asian Workshop on Population Educa- tion for train- ing of teacher education staff, Workshop on the role of colleges and universities in National Educa- tional Conf., Workshop on Problems and Resources in National Bureau of Education, Paris, Life and Resour- ces Guide.</p>	<p>National Seminar on Population Education, Population Studies Center under the aus- pices of WPY—curriculum strategies in higher education. (S.V. University) NCERT publications: Mehta, T.S. <u>Population Education for Teachers</u>. A draft syllabus. Other publications: Gopal, Rao D., <u>Population Education— A Guide to Curriculum and Teacher Education</u>. Sharma, R.C., <u>Population Trends and Resources in India—A SourceBook for Population Education</u>. Mascarenhas, M.M., <u>Population Education for Quality of Life</u>. Family Welfare Center, Bangalore. <u>Population Education: Guide Book for Secondary School Teachers</u>, Central Health Education Bureau, Govt. of India. <u>Population Education for Teachers</u>, NCERT.</p>	<p>Population Education Program for the Baltimore City public schools Individual efforts, Population Education courses at the college level, <u>Teaching Notes in Population Education</u>, Population Education content in secondary school curricula, a survey under the sponsorship of the Population Council, Proposal for International Communication Network in Population Education, <u>Building Population Program in Universities— a Brief Guide for Policy Makers</u>—by Rolf P. Lynton, University of North Carolina, Chapel Hill, A Structure for Population Education, by Mary Lane and Ralph Wileman, School of Education, N.C.U., <u>Problem of Introducing Population Educa- tion in College</u>, The Population Activist's Handbook, Population Institute. American Home Economics Association Publications</p>	<p><u>Population Education, A Curriculum for Higher Education</u>, FPDP and Colombo Plan. Prepared by the Cur- riculum Committee of FPDP, Continuation of teacher education programs, Curriculum guides for teachers for elementary and high schools Drafts—tried at school level</p>	<p><u>Family Planning Population Education Issues in Australia</u> Proceedings and discussions by R. H. Cochrane</p>
<p>Population Educa- tion in Asia, A Study of Education Population Educa- tion of Asian Countries, UNESCO International Conference on Population Education UNESCO Pro- gram to dif- fuse people work- shop</p>	<p>State level activities, publication of newsletter in Population Education, Programs of FPAI in the non-school sector, Preparation of lessons in Population Education at the governmental level, <u>Population Science—A Multidisciplinary Study</u> by Sohanlal Nagda, S.V. University A. P. India. Involvement of the Regional Colleges of Education</p>	<p>A Sourcebook for National Prog. by Sloan R. Wayland (draft), American Home Economics Association Resource Catalog, <u>Population Education Workshop—March 1975</u></p>	<p>Publication of Journal in Popula- tion Education: <u>Options</u>, Bimonthly special re- port of the Population Center, Foundation of the Philippines</p>	
<p>of the Con- ference Methodology—</p>		<p>Population Education in the United States, by Carl A. Huether and Susan O. Gustavus, A PRR Report, March 1977</p>		
<p>A Contempo- rary UNESCO,</p>				

NOTE: This table provides a suggestive and limited list of activities and publications at the international and national levels, with an emphasis on Asian countries and the United States. Papers and publications of experts and individual papers are not included. For details please see the reference section.

1. The exploratory phase: 1965-1969: This phase was devoted to the analysis of population developments and establishing the rationale for Population Education. It represents the period of UNESCO's recommendations, initiation of interest in the Asian countries and the identification of curricular issues.

2. The phase of national programs: 1970-1974: This phase included the initiation of national programs in several developing countries, such as India, the Philippines, the Republic of Korea, and the convention of national and international seminars and workshops in the area of orientation, curricular issues, teacher training and research.

Other activities during this phase were focused on the appraisal of the role of universities and teacher training institutions; preparation and dissemination of materials for teachers and students; examination of knowledge base issues and need for a sourcebook; and initiation of a theoretical appraisal of Population Education as an educational concept.

The World Population Conference held in Romania in 1974, under the auspices of World Population Year gave a new perspective and impetus to Population Education activities.

3. The conceptualization phase: 1975-1978: The major activities during this period were devoted to the preparation of sourcebooks and guidelines in an effort to conceptualize the new curricular idea. This included publications of handbooks, guides for curriculum planners and dissemination of information, and an

International Study on the Conceptualization and Methodology of Population Education (ISCOMPE), which was taken up by UNESCO to draw out the conceptual philosophy underlying Population Education. This has been published as a UNESCO series in Educational Studies and Documents (Population Education, A Contemporary Concern, ISCOMPE, UNESCO, 1978)

This phase was also marked by the initiation of college and university programs in Population Education, in addition to teacher education programs, which began in the second phase. In the case of national programs, diffusion of Population Education activities spread to the state levels in several countries.

Research and doctoral studies in the field were taken up by educators and students in the field of education.

2.3. Curricular strategies and approaches:

2.3.1. General features of the curricular projects in Population Education: Population Education curricula in different regions of the world emphasize different aspects. Burleson (1974) reviewed these programs and discussed the various perspectives in different countries. In Asia, it is directed towards presenting a comprehensive multifaceted aspect of the population situation, with the hope that it will lead people to make rational decisions concerning their own behavior and attitude toward population matters. In Latin America, the emphasis is oriented toward family life education, sex education and environmental education. In Africa, the Population Education programs are

proposed as a part of the total developmental strategy, with an emphasis on social, economic and ecological environment. Population Education in the U.S. is offered in many different environments. Gustavus and Heuther (1975) in their study on programs in the U.S. schools came to the conclusion that the emphasis in the U.S. centers around a combination of environment with demography and the social consequences of population changes.

Existing programs in most of the countries are at different stages of development. Generalizations about their characteristics are difficult to make. However, Viederman and Wayland (1973) in their appraisal of various formal educational programs in different countries, summarize the following general pattern underlying these programs:

(1) The mode of inclusion of Population Education in the curriculum is through infusion or integration of population content, where relevant, into the existing courses of study to overcome the problem of overcrowded curriculum. Other approaches, including units, special courses and cocurricular activities are being developed and tried at the experimental level.

(2) Most countries are introducing Population Education at the middle and secondary level and occasionally at higher education level. The recommendations of the seminars and conferences recognize the need for Population Education at all levels, but the level of entry has been different in different countries.

(3) Much of the integration gets done in social studies, science--particularly biology, home economics, health education, mathematics and occasionally language. The content focuses mostly on the macrolevel events. The paucity of information at the microlevel is being recognized.

(4) The pedagogical approach used in the Population Education units are essentially the same as in other aspects of the curriculum. The instruction is provided by the regular classroom teacher rather than a specialist.

(5) Inservice programs for teachers have been undertaken. Instruction units, teacher guides and teaching materials are being developed to assist the regular classroom teacher. Pre-service programs are underway in countries like India, Philippines and the U.S.A.

(6) Problem solving is being emphasized as the process of instruction. Experimental projects to develop different approaches and curricula, different methodologies and evaluation techniques are being undertaken when funding is available.

(7) The development of curriculum is either done by a curriculum specialist at the national level--as in India, through the Population Education Cell of the Ministry of Education or by a team of curriculum specialists and teachers from different areas, as in the case of the Philippines. In the U.S.A. curriculum development projects for the schools have been undertaken by several universities in different disciplinary areas.

Curricular activities and projects being developed by UNESCO, and in India, the Philippines and the U.S. are presented in the following section to illustrate the various curricular strategies and approaches underway in these countries and at the international level.

2.3.2. UNESCO programs and projects:

The major curricular effort by UNESCO was the Asian Regional Workshop on Population and Family Education in 1970, under the auspices of the UNESCO Regional Office for Education in Bangkok, Thailand, to develop guidelines for curriculum development and instructional materials in Population Education. The report of the workshop includes definition, scope and content of Population Education and provides a model for curriculum development and teacher training in the area. The workshop resulted in two curricular documents--Book I on Natural Sciences and Math and Book II on Social Studies. These documents have been widely used by many Asian countries in developing their programs in Population Education.

The other UNESCO publications related to the curricular issues are--Population Education, A Source Book for Asia, 1975; and the International Study (UNESCO, ISCOMPE, 1978).

The Source Book for Asia is designed to provide a formulation of a knowledge base for Population Education, and to make available a body of concepts and data pertaining to the Asian

region. The Source Book focuses on the consequences of population changes on the quality of life in the area of food, health, resources, education and socio-economic development at the individual and social level. ISCOMPE (UNESCO, 1978), represents the only comprehensive conceptual study of Population Education to date.

A bibliography on Population Education--Perspectives in Population Education, UNESCO, 1974, has been prepared by Noel-David Burleson under the auspices of the International Bureau of Education, Paris. This was the result of a global study of Population Education programs around the world, and was followed by the UNESCO Project on the conceptualization study of Population Education (UNESCO, ISCOMPE, 1976--first draft), an UNFPA project.

2.3.3. Population Education in India:

Curricular issues were identified during the national seminars on Population Education (FPAI, 1969, 1972; NCERT, 1969, 1972; and CHEB, 1969). Several approaches and strategies were proposed during these deliberations. Reports and proceedings of these seminars and workshops are widely being used for curriculum development and teacher training in several educational institutions in different parts of the country.

In 1971, a project was undertaken by the Population Education Cell of the NCERT to conduct a content analysis of the areas of study common in the educational curricula such as social studies, sciences, health education, mathematics and languages,

in order to identify the 'points of entry' and the themes relating to Population Education to be infused in the different subjects. This resulted in the publication of 'Plug Points' for Population Education in School Curricula, NCERT, (1971).

Other publications related to curricular issues and teacher education include: Population Education, a Draft Syllabus, NCERT (1971)—for school level; Bibliography in Population Education, NCERT (1971); Indian Population Situation, NCERT (1971) a compilation of country specific data and information on Population Education; Population Education, Selected Readings, NCERT (1972); Nutrition and Population Education—A Resource Book for Teachers, NCERT (1973); Population Education for Teachers, NCERT (1974); Population Education; Guide Book for Secondary School Teachers, CHEB, Government of India, Undated; Population Science—A Multidisciplinary Study by Sohanlal Nagda, Population Studies Center, Sri S.V. University, India, 1975; Population Education for Quality of Life, by Marie Mignon Mascarenhas, Family Welfare Center, Bangalore, India, 1974 : A Guide for Curriculum Development and Teacher Education in Population Education, by Gopal Rao, 1974; Resources, Environment and Population, A Hand Book for Teachers in Population Education, by R.C. Sharma, 1975; A suggestive list of publications has been presented to illustrate the efforts at the national and university level in the area of curricular strategies and teacher training in Population Education in India.

2.3.4. Population Education in the Philippines:

A five year pilot project, funded by UNFPA, under the supervision of UNESCO became operational in 1972. This program resulted in the preparation of instructional materials for all school levels, in various subjects, such as social studies, general science, mathematics, languages and home economics (Philippines Ministry of Education, 1973; PEP, 1973).

Teachers' guides have been prepared for the above instructional areas. For the tertiary level, a prototype course in Population Education for college students in Arts and Science is under preparation. A resource book in Population Education for teacher education has been prepared for in-service training. Also, modules of instruction in areas such as human sexuality and reproduction, and population age structure, are being developed. (Teach. Guide for Pop. Edn., 1973; Pop. Edn.: A Curr. Guide for Higher Edn., 1974).

Inservice training for personnel such as the supervisors, college instructors and trainees for inservice courses, has also been conducted. Curriculum guides for teachers have been prepared by a team of curriculum consultants and teachers from different areas. Publications of periodicals, such as the OPTIONS brings the views of students, teachers and curriculum developers together, and provides a forum to suggest curriculum guidelines and teacher education strategies in the area of Population Education.

2.3.5. Population Education in the U.S.:

A diversity of approaches and activities characterize Population Education programs in the U.S.A. as reviewed by Huether and Gustavus (1977). Unlike the national programs in Asia, in the U.S., much initiative has come from non-governmental organizations outside the schools. Projects have been undertaken by various organizations in different states, including local Planned Parenthood affiliates, Zero Population Growth, Public School Systems, Universities, and the various population research centers. Some of these activities in curriculum development are presented to highlight the major efforts.

Population Education activities in the universities and other institutions of higher education have been quite varied. The University of Delaware, Florida State University and the University of North Carolina, have been seriously involved with the development of Population Education in their states. Many universities, such as the University of North Carolina have overseas projects in Population Education. Professional organizations, such as, the National Council for Social Studies, The American Sociological Association, American Association for the Advancement of Science, National Education Association, to name a few organizations, are involved in Population Education curricular activities.

Teacher training activities include seminars and workshops for inservice, preparation of teacher guides and curriculum materials. The Baltimore program (Cochran and McCrea, 1974) focuses on

Population Education for inner city students, with an urban emphasis and represents an extensive program in teacher training.

Publications of the Population Council projects, the Population Reference Bureau, the instructional packages and materials prepared through the Population Education projects in several universities, are but a few efforts in the area of curriculum and teaching. Newsletters and teaching notes are being published for the exchange of ideas and information (Viederman, 1972).

A number of experimental projects in Population Education have been undertaken to develop different approaches to the modes of inclusion, such as infusion, unit approach, separate courses, interdisciplinary units and problem oriented modules (Massialas, 1972).

The content focus in various curricular programs is reviewed by Wayland (1975). Delaware and North Carolina focus on population and environment, the Florida program is focused on social studies, demography forms the basis of Population Profiles Project sponsored by the Population Association of America. Likewise, Population Reference Bureau material is largely demographic in content. A higher education program has been focused on depopulation in rural areas; Carl Heuther and Willard Jacobson have emphasized the natural science aspect. The University of Michigan includes sex education as an explicit part of its Population Education curriculum.

Marden (1974), and Rogers (1974) deal with the status of Population Education at the higher education level. Doctoral

studies in Population Education are also being taken up reviewing U.S. Population Education Programs.¹

Instructional materials for Population Education also include PRB publications, such as, OPTIONS, (1974); Intercom (the international population magazine) and Population Bulletin. Interchange, a PRB Newsletter through its several issues caters to the needs of school teachers in the U.S. It represents a valuable medium through which specialists' knowledge in population is translated for educational purposes. Introduction of inquiry-oriented learning Modules (Clark, 1977) is a new feature added to the Newsletter. Special mention is made here of other publications by PRB including, World Data Sheet in population, published and updated every year, a series of Charts based on world and U.S. population related issues and data for educational purposes, and Population Education: Sources and Resources, a compilation of information about organizations and institutions involved in educational activities in population and related areas and curricular materials for teachers and students. Books are also being published in Population Education (Jacobson, 1977; Kline, 1976).

The Commission on Population Growth and American Future (1972) strongly recommended the development of Population Education programs. This gave impetus to several experimental projects throughout the country.

¹Population Education in the U.S., doctoral dissertation by Elaine Murphy, University of Maryland, May 1978.

2.3.6. Curriculum approaches in non-formal Population Education programs: Out-of-school Population Education is recognized as an integral aspect of the total Population Education program. A number of efforts in this area are being directed to develop a comprehensive program for different audiences in the non-formal educational settings. Various national and international organizations have incorporated Population Education contents in their programs:

FAO: Population Education is introduced into agriculture education institutions, rural extension work, home economics programs, community development and research programs. A Population Education Curriculum Guide—Population, Family Life and Resources, (FAO, 1974, draft copy) has been prepared for the education extension programs in home economics, agriculture and community development.

The Family Planning Association of India (FPAI) has established a special department of Population Education for developing curricular materials for the out-of-school programs.

As the focus of the present study is confined to the area of formal education, non-formal programs have not been discussed.

2.4. Guidelines for curriculum development and teacher education:

Wayland through his several papers (see the Reference List) and a Source Book (1975, draft copy), analyzes the issues of Population Education curriculum innovation within a systems approach. Mehta (1969, 1972) identifies the necessary steps in curriculum development.

Jayasuriya (1972), Paik (1974) and Chauls (1974) discuss and provide guidelines for curricular strategies for specific situations. Rao (1974) and Sharma (1974) have developed handbooks for teachers providing different perspectives on curriculum development and teaching methodologies.

Viederman, through his several papers (1971, 1972, 1973 and 1974), Massialas (1975), Bouvier (1975, Jayasuriya (1972, 1974), Johnstone (1974), and Kline and Harman (1976) have contributed toward the rationale and conceptualization and have provided a framework for the development of a theory of Population Education.

Thus, Population Education through all these efforts is evolving as a planned curricular innovation. The curricular and pedagogical issues are being confronted in relation to the other attributes of the educational system, including the implications for teacher education and higher education.

2.5. Summary: A review of Population Education in India, the Philippines and the U.S. was presented, in the present chapter, in the international context with a special focus on curricular strategies being adopted and developed for this area. An overview of events and activities for the period from 1965-1978 was traced within a global perspective to identify the major historical milestones and phases in the evolution of Population Education. General features and characteristics of various programs were discussed to highlight the curricular trends in this area.

The next chapter is devoted to the methodology adopted for the present study. It provides the procedure and the scheme of investigation followed for the analysis of the concept of Population Education.

CHAPTER 3: METHODOLOGY

- 3.1. Major steps involved in the study
 - 3.1.1. Procedure for the study
 - 3.1.2. Selection and classification of documents and collection of data
 - 3.1.3. Schema and matrix for the analysis of documents
- 3.2. Content analysis procedures
 - 3.2.1. A pattern for the content analysis of the curricular materials
 - 3.2.2. Conceptualization process for the analysis of Population Education
- 3.3. A need to provide a 'contextual framework'—an 'a priori' condition for the analysis of Population Education in the present study

CHAPTER 3

METHODOLOGY

This chapter describes the steps involved in the study including the procedure, the selection and classification of documents and the collection of data. It outlines the method adopted for the content analysis of the curricular materials and the components of the conceptualization process used.

3.1 The study involved the following steps:

1. Development of a 'contextual paradigm': This included the identification and explanation of terms, phrases, factors and processes related to the study of population and relevant to the analysis and interpretation of the concept of Population Education.
2. Analysis of Population Education in terms of rationale, goals and the content.
3. Examination of the curricular issues with a focus on the formulation of a knowledge base for Population Education.
4. Appraisal of the curricular strategies and approaches in the international context, based on the study of programs being developed in India, the Philippines and the U.S. and those being developed by UNESCO, and the formulation of guidelines for curriculum development in Population Education.
5. Study of teacher education and higher education curricula and activities being undertaken in India, the Philippines and the

U. S. to identify and discuss the educational implications of the concept with a special emphasis on teacher education.

3.1.1. Prodecure for the study: The procedure developed for the study consisted of the following steps:

A. Literature survey, which was conducted in three major areas:

- (i) in the selection and classification of relevant documents and curriculum materials,
- (ii) the collection of data, and
- (iii) establishment of a pattern for content analysis of the documents and curriculum materials in Population Education.

B. Drawing up a scheme and a matrix for the study based on the major categories to be analyzed in the selected and tabulated documents.

C. Formulating a conceptualization process for the analyses of the various characteristics and curricular strategies in Population Education.

D. Developing a 'contextual paradigm' of terms, phrases, concepts and processes involved in the study of population in order to provide a framework for the interpretation of the content analysis of the documents.

E. Content analysis of documents in terms of rationale, goals, content and the curricular and pedagogical approaches.

F. Evolving curriculum development guidelines.

G. Examining the educational implications of the concept and the role of higher educational institutions in training teacher educators and teachers in Population Education.

3.1.2. Selection and classification of documents and collection of data:

Collection of data was done from the primary and secondary sources. The following documents were selected:

1. UNESCO and other international documents related to curricular and pedagogical issues, 1970-1978.
2. Reports of national and international seminars/conferences/workshops, 1969-1975.
3. Reports of projects and programs in Population Education from population study and research centers in various universities in the U.S., India, and the Philippines, including books, dissertations and readings, 1970-1975.
4. Curriculum materials in Population Education from selected countries, mainly India, the Philippines and the U.S., 1970-1978.
5. Individual papers and proposals by experts and articles from various journals, 1965-1977.

Collection of data also involved:

6. Visits to selected institutions and universities in the U.S. where Population Education projects were in operation.
7. Personal interviews, discussions and correspondence with experts working in the field.

Documents and data were made available through visits to the libraries of the Population Council, New York; Teachers' College, Columbia University, and the Carolina Population Center of the North Carolina University, Chapel Hill, N.C. Some of the documents were obtained from the Family Planning Association of India (FPAI) and the National Council of Educational Research and Training (NCERT), Ministry of Education, Government of India.

Expert guidance throughout the study was obtained from:

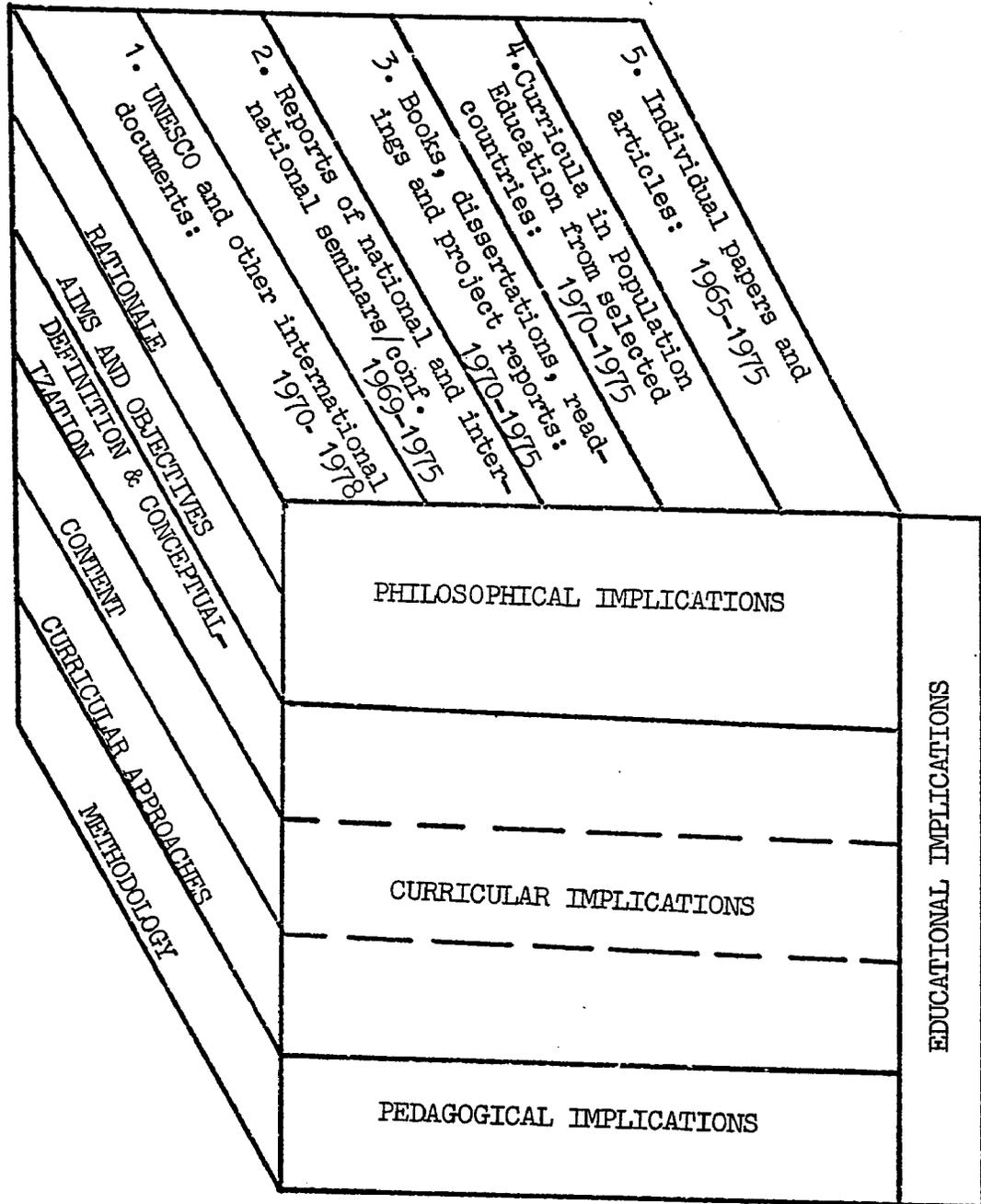
(1) Dr. Sloan R. Wayland of Teachers' College, Columbia University, a pioneer in the field, a UNESCO consultant for international activities, and in charge of Population Education activities sponsored by the Population Council, N.Y.; (2) Dr. Stephen Viederman, the past Assistant Director of the Demographic division and in-charge of the Population Education activities of the Population Council, N.Y., until 1975, and the director of Global Perspectives in Education, Inc., N.Y. until 1977, and presently the Director of the demographic division of the United Nations Fund for Population Activities (UNFPA) of the UNESCO; and, (3) Dr. Robert Leight, academic advisor during the study.

3.1.3. Schema and matrix for the analysis of documents:

A schema was developed to provide a comprehensive view for the analysis of the selected documents, which is presented in a diagrammatic form (Figure 3.1.), showing the various components in terms of rationale, objectives, content and methodology,

FIGURE 3.1

**A COMPREHENSIVE MODEL OF THE SCHEMA FOR THE
ANALYSIS OF DOCUMENTS**



deriving the philosophical, curricular, pedagogical and overall educational implications. The matrix (Table 3.1.), illustrates a broad format used in the identification and tabulation of relevant information from the different documents. A further breakdown of this broad categorization was done through the content analysis pattern described in section 3.2.1.

3.2. Content Analysis procedures:

3.2.1. A pattern for the content analysis of the curricular materials:

A 'Curriculum Materials Analysis System' for multidisciplinary areas, developed by the Social Science Education Consortium, Boulder, Colorado (Capron, 1971) was referred for the present study to establish a systematic procedure for the content analysis of the curriculum materials in Population Education. The adapted outline of the "analysis system", comprised of the various categories in order to identify the specific characteristics from the documents, is presented in the following section:

- 1.0. Product characteristics
 - 1.1. Subject content
 - 1.2. Intended uses
 - 1.3. Printed materials and other media
 - 1.4. Dominant instructional characteristics
 - 1.5. Performance data availability

- 2.0. Rationale and objectives
 - 2.1. The individual and society
 - 2.2. Knowledge and values
 - 2.3. Existence and use of a rationale
 - 2.4. Cognitive objectives
 - 2.5. Affective objectives
 - 2.6. Psychomotor objectives
 - 2.7. Behavior objectives

TABLE 3.1

TABLE FOR THE CONTENT ANALYSIS OF THE DOCUMENTS

NAME OF THE DOCUMENT	RATIONALE	AIMS & OBJECTIVES	DEFINITION & CONCEPTUALZ'N	CONTENT	CURRICULAR APPROACHES	METHODOLOGY
I. INTERNATIONAL A. UNESCO (1) Name Year (2) B. OTHER Int. Ag. (1) Name Year (2)						
II. NATIONAL SEMINARS, ETC. (1) (2)						
III. BOOKS DISSERTATIONS (1) (2)						
IV. CURRICULA (1) India (2) The Philippines (3) The U.S.A. (4) UNESCO						
V. INDIVIDUAL PAPERS (1) Name (2) Title (3) Year						

- 3.0. Content
 - 3.1. Cognitive content
 - 3.2. Affective content
 - 4.0. Theory and Strategies
 - 4.1. Learning theory
 - 4.2. Instructional theory
 - 4.3. Teaching modes
 - 4.4. Strategy pattern
 - 4.5. Effectiveness
 - 5.0. Antecedent conditions
 - 5.1. Educational setting
 - 5.2. Teacher characteristics
 - 5.3. Community characteristics
 - 5.4. Audience characteristics
 - 5.5. Relationship to other aspects of curriculum
 - 6.0. Evaluation
 - 6.1. Sources of evaluation data
 - 6.2. Effects predicted or reported
 - 6.3. Comparisons
 - 6.4. Recommended uses
 - 7.0. Background of materials development
 - 7.1. Nation, institution and/or person(s) responsible for materials
 - 7.2. Associated programs
 - 7.3. Dissemination
- 3.2.2. Conceptualization process for the analysis of Population

Education:

An outline developed by the International study for the Conceptualization and Methodology in Population Education (UNESCO, ISCOMPE, 1975) for the structuring of data, topics and issues in this area, was referred to provide a framework for the detailed analysis and interpretation of Population Education in the present study.

Components of the Conceptualization Process:

Five basic themes or questions formed the central core components of the conceptualization process. They were formulated as:

Population Education:

1. What is it?
2. Why?
3. How?
4. Where?
5. For whom?

Each theme was broken up into several sub-components:

1. Population Education: What is it?

A. Problem of definition, need for a definition, rationale and the formulation of a definition..

B. Goals of Population Education: General goals:

- (i) in relation to population situation; and
- (ii) in relation to educational innovation and renovation.

Contextual factors in goal formation: Cultural differences; demographic, socio-economic and educational conditions; urban-rural setting; regional disparities of power and wealth, specific relationship between general goals and socio-economic development; the ecosystem and objectives of Population Education; objectives dealing with family adjustment, human reproduction and social change.

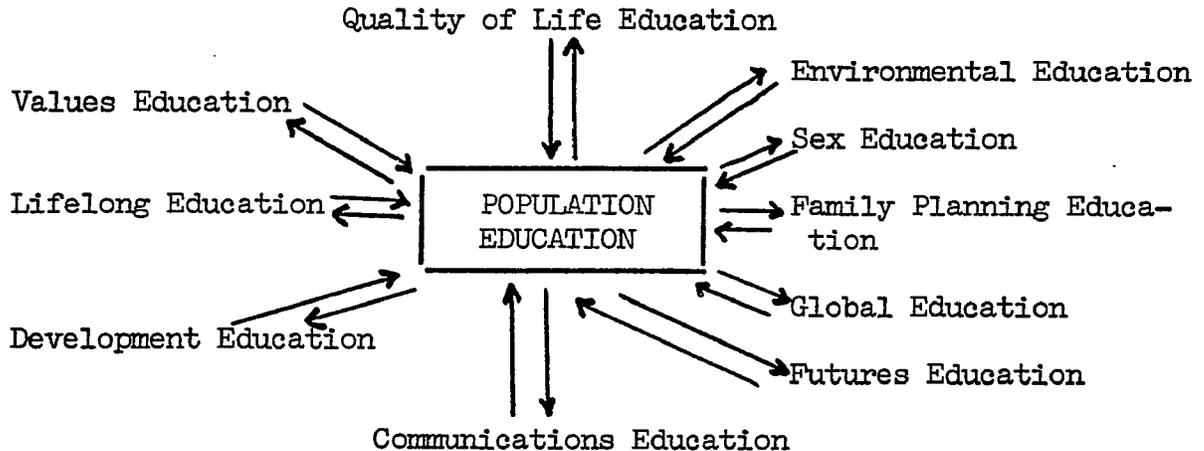
C. The content of Population Education:

- (a) Knowledge base: Identification and formulation of the knowledge base; factors involved in this formulation; various frameworks; population studies for Population Education.
- (b) Content: Derived from knowledge base, determined by several considerations, including the goals of the program, the audiences and the educational setting.
- (c) Organization of the knowledge base: Several approaches can be adopted. One formulation presented below:
 - (i) The population situation
 - (ii) Population situation and quality of life issues
 - (iii) Cultural factors and traditions; 'folk-demography'; inadequacy of micro level data; need for research in terms of values, beliefs, norms and attitudes related to life cycle events and decisions
 - (iv) sexuality and human reproduction; social and psychological aspects; family planning and contraception
 - (v) Action programs: Public policies and programs; individual, family and group choices

D. Relationship to other educational activities:

1. To other problem oriented curricular areas, such as, environmental education, family life education, family planning education and developmental education.
2. To some new emerging concepts in education, such as, moral education, life long education, value education, futures education and communications education.

Overlapping and sharing of content with various areas is conceptualized by the researcher as shown in the following representation:



2. Population Education: Why?

- a. Search for a rationale: Need for a new curricular area; rationale and varied population situations and perceptions; role of education.
- b. Educational implications, future prospects and strategies:
 - (i) integration of Population Education as a significant

aspect of population as well as education policy of a nation; (ii) its specific contribution to formal and informal educational content and processes; incorporation of emerging ideas and emphases in education, in developing interdisciplinary models in teaching and learning, orientation to teacher-student relationships; implications for teacher education; school-work relationship, taking a broad view of the total educational process; (iii) its contribution to the understanding of controversial population issues, the conflict of ideas and the overall population phenomena.

3. Population Education: How?

Pedagogical methods and techniques related to:

- a. Curriculum development: Various curricular approaches; relationship of Population Education curricula with population learnings through other settings; consideration of Linkages in developing an integrated Population Education curriculum; consideration of ethical issues.
- b. Learning process: Multidisciplinary, interdisciplinary and other characteristics of Population Education, and the teaching/learning methods.
- c. Teacher education: Pre- and inservice training. The necessary background—general education, special knowledge and skills related to Population Education, teaching guides, handbooks and instructional materials.

d. Evaluation:

(i) Based on a dialectic interaction between a theoretical frame of reference and an empirical feedback of the expected outcome of the Population Education programs.

(ii) Specific evaluation problems and criteria in PE: factors affecting evaluation--the time lag factor, issues of commitment rather than knowledge.

4. Population Education: Where?

National, sub-national, regional and international levels; in and out-of-school; other institutions:

- Goals, contents and methods
- Program priorities
- Program outcomes

Need for local emphasis in Population Education.

5. Population Education: For whom?

(i) Educational personnel: decision makers, policy makers and supervisors

(ii) Learners inside and outside the educational system and other audiences--school/university students, out-of-school youth, adult groups, women, rural and urban workers, and parents

(iii) Educational activities and strategies for the different audiences--seminars, mass-communication and media; curricula for formal and non-formal setting, extra-curricular and curricular programs.

Summary: The process of analysis for the present study was conceptualized in four stages--(i) the schema of analysis; (ii) the matrix for tabulation; (iii) the curriculum materials analysis 'system', which provided the categorization scheme for the characteristics of the materials, and finally (iv) the conceptualization process, which provided the total framework and guidelines for the understanding and interpretation of the concept.

3.3. A need to provide a 'contextual framework' in the study of Population Education--an 'a priori' condition:

This section discusses the assumptions and the need for developing a 'contextual paradigm' as a prior condition to the analysis of Population Education in the present study.

Population is an interdisciplinary area. Most of its data and concepts are in statistical aggregate terms. Teachers and students of education are generally not exposed to interdisciplinary studies and approaches, and are unfamiliar with the various terms, phrases, factors and processes involved in the study of the population phenomena in its social and ecological context (Burleson, 1974). Though there are numerous sources of population studies, these are mainly in the language of a specialist, which makes it difficult for the population educator and teacher to comprehend the nature of this curricular innovation.

It was therefore deemed necessary to provide the essential basic information and explanation of population related concepts,

and data, in order to develop an educational perspective as against the narrow unidimensional 'crisis' and 'explosion' perspective presented through the popular media, which usually is the major source of population learning. This 'a priori' condition was considered a significant aspect of the methodology procedure in order for the study to develop in the context of a broader meaning of the term 'population' as conceptualized in Population Education.

The following chapter is devoted to this end. The purpose is two-fold--(i) to define and explain terms and phrases in the study of population, in order to delineate the various population parameters related to Population Education, and (ii) to illustrate the diversified means and techniques that can be used in the study and interpretation of population related concepts and data. It is hoped that such a background will facilitate the introduction of teachers and students to interdisciplinary approaches to education, in view of their discipline oriented education.

CHAPTER 4: A 'CONTEXTUAL PARADIGM' FOR POPULATION EDUCATION

- 4.1. The Population perspective
 - 4.1.1. Population characteristics and population change
 - 1. Basic terms and phrases
 - 2. Some facts and figures---world population in historical perspective
 - 4.1.2. Factors affecting population change
 - 1. Mortality and the factors affecting it
 - 2. Fertility and the factors affecting it
 - 3. Migration, population redistribution and urbanization
 - 4.1.3. 'Macro' and 'Micro' variables in population dynamics
 - 1. Population and quality of life issues
 - 2. Life cycle events related to population
- 4.2. The Educational perspective
 - 4.2.1. Curriculum changes in the developed countries
 - 4.2.2. Curriculum changes in the developing countries
- 4.3. Summary

CHAPTER 4

A 'CONTEXTUAL PARADIGM' FOR POPULATION EDUCATION

The context of Population Education draws from two perspectives—population and education. It takes into account the transdisciplinary and all inclusive nature of this curricular area within a comprehensive view of the population phenomena and the educational process. A 'contextual paradigm' is built in the present chapter, in order to facilitate the interpretation of the concept in a broader perspective—in terms of the varied and changing population perceptions in different regions of the world. This treatment assumed meaning in view of the fact that Population Education is a global curricular development of an interdisciplinary nature in a controversial area, and thus has a special place in the history of education (Wayland, 1972a). It does not have an established knowledge base as in the case of other disciplinary areas. The development of various programs and the conceptualization of the field has been occurring in the absence of a model or a knowledge referent.

The present Chapter was designed to organize and develop a 'contextual framework' of the events, factors, and processes which have been identified as essential dimensions of population and education for Population Education. The intent was not an exhaustive treatment of these dimensions, but merely to define and explain the concepts, terms, and processes involved in the study of population, and the emerging curricular and educational perspectives related to the interpretation of the concept of Population Education.

4.1. The Population perspective:

In the conception of Population Education, the study of population deals not merely with the size of the population, but also with its composition, distribution, and change in terms of population increase and population decline. The interrelationship between the demographic, the socio-economic and ecological factors are significant in that they interact and influence each other.

4.1.1. Population characteristics and population change:

1. Basic terms and phrases: A brief explanation of terms and phrases is given for the purpose of the present study. A detailed account of these will be found in several sources on population study, including the Population Education Source-book by UNESCO (1975).

- (i) Size and composition: Number of people living in a geographical area and their composition in terms of sex, age, race, marital status, level of education, and employment status. Information on these is obtained through the census and national surveys and is used for legislation, taxation, and other economic and social purposes.
- (ii) Population change: Population changes occur through births (fertility), deaths (mortality), and migration, affecting population size, composition and distribution. Information on population is mostly in statistical terms. Some of the demographic measures used for interpreting

these data are birth and death rates indicating how many people are added or subtracted per thousand persons from a population; general fertility rate gives the average number of children born per 1,000 women of child bearing age; rate of natural increase: the difference between the birth rate and death rate (also referred to as crude birth rate and crude death rate), excluding net migration, is known as the rate of natural increase. Migration affects the population size as well as distribution of the population within and among countries. The net migration rate is the difference between immigration and emigration rates. Rate of population growth in terms of increase or decrease, is the difference between the birth and death rates plus the net migration rate and is expressed in percent.

Another concept used in interpreting population growth is the doubling time. It is the number of years needed to double the original population size, depending on the rate of population growth. If the growth rate is one percent the doubling time is seventy years, (as in the industrialized nations), and if it is two percent, the doubling time is thirty-five years as in most of the developing nations. Other measures related to population growth are infant mortality rates and life expectancy.

Demographic transition is a concept which is useful in portraying the pattern of change over time in the rate of natural increase and is conceptualized in four

stages (Fig. 4.1), of i) high birth rates and high death rates, with 0.5 % rate of natural increase per year, Stage A; ii) birth rates continue to be high, but the death rates decrease, resulting in a sharply greater rate of natural increase, reaching a peak of 3.2% per year, Stage B; iii) in the third stage C, the birth rate decreases while the death rate continues to be low. There is a decrease in the rate of growth, reversing the pattern in Stage B; iv) in the final stage 'D', birth rates and death rates are relatively low with the natural increase of around one percent a year. This concept is presented as a graph, as is done in the UNESCO Sourcebook (1975, part 3, p.7), (Figure 4.1).

STAGES IN THE DEMOGRAPHIC TRANSITION

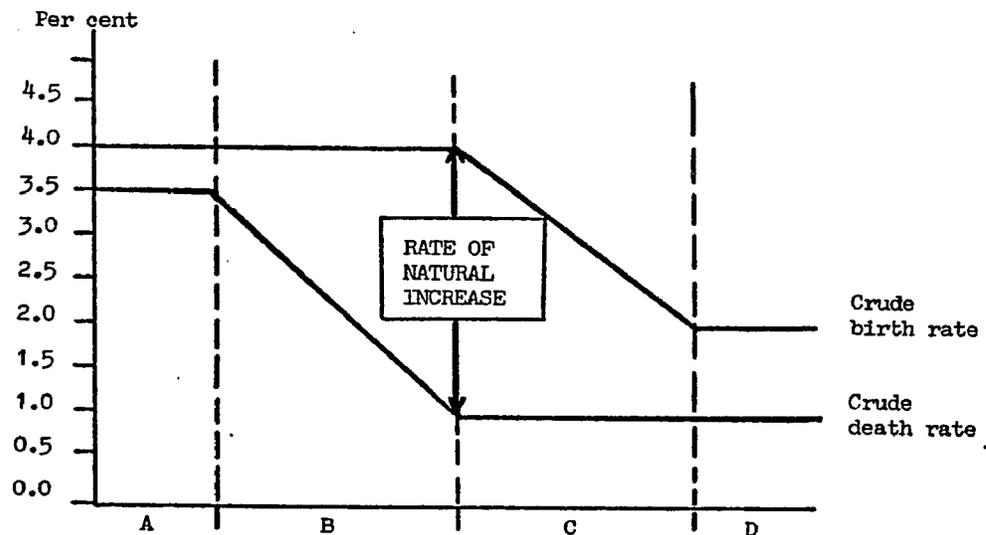


Fig. 4.1

(iii) Age and sex composition: Age distribution descriptions are made in terms of median age—the age which divides the population into two equal parts of dependency ratios—the ratios of population in very young and old ages, (youth dependency ratio and aged dependency ratio), who are normally dependent to the total population in the working ages (15-64 years).

Population pyramid: Age and sex composition data, when considered together can be presented in a graphic form called the population pyramid. For instance, the UNESCO Sourcebook (1975, part 3, p. 15) describes the age and sex profiles of some of the Asian countries and the United States in the form of population pyramids (Fig. 4.2). Westoff (1974, p. 114) traces the change in age and sex distribution over time in the United States in 1900 and 1970 (Fig. 4.3). The pyramid of 1900 is characteristic of a fast growing population, resembling the pyramid of fast growing populations of Asia today, with high birth and death rates.

2. Some facts and figures about world population situation:

(i) Population changes in a historical perspective:

Davis (1974) traces the significant changes in world population situation which began sometime around 1750 as a result of the industrial revolution and

Population by age and sex for the United States and the Asian region: percentage distribution (population pyramids)

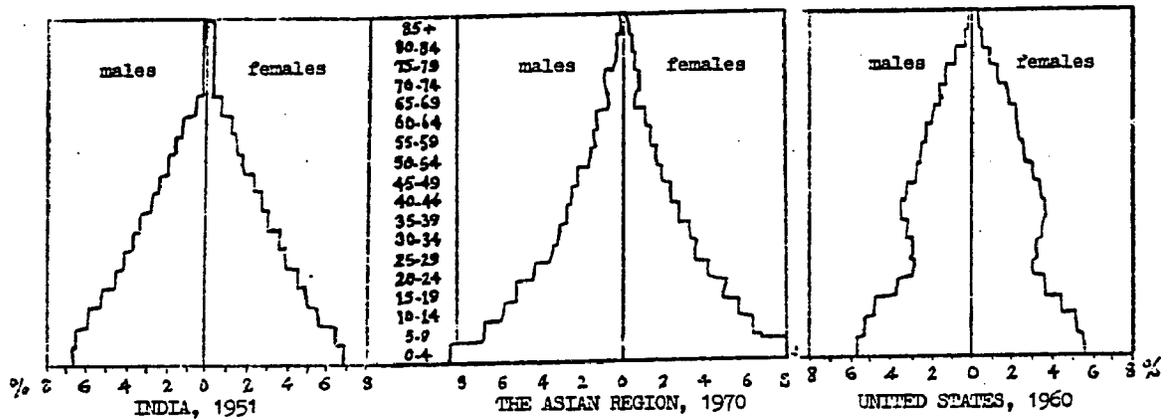
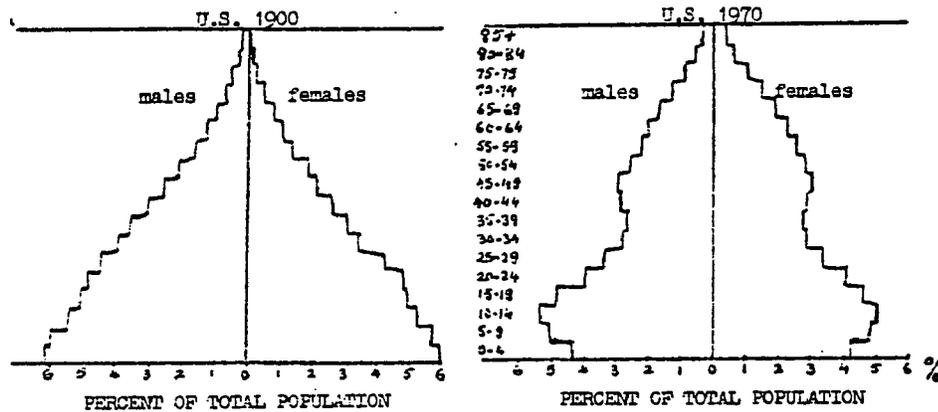


Fig. 4.2



U.S. POPULATION OF 1900 has the age composition shown in this pyramid. Its shape is characteristic of a fast-growing population with high birth and death rates where the average life expectancy is under 60. A third of Americans were under 15 years of age.

U.S. POPULATION OF 1970 gave rise to a pyramid whose sides are pinched in because of the low birth rate during the years of the Great Depression. The bulge centered on the 10-to-14-year-old age group is a consequence of the post-war baby boom.

Population Pyramids—U.S., 1900 and 1970

Fig. 4.3

technological transformation in Europe. Death rates dropped and population began to grow rapidly. Between 1840 and 1930, emigration took one-fifth of Europe's young and productive population to the 'New Lands.' The population of the new worlds increased fourteen times between 1750 and 1930, while the rest of the world increased by 2.5 times. Except for the post World War II 'baby boom', population has been gradually declining in the western countries as a result of a combination of factors, such as rapid development and industrialization, application of science and technology in 'death control', spread of education and change in family structure and life styles.

Population growth in the rest of the world began after 1921, when death rates began declining gradually. Mortality rates before 1921 were high due to famines, epidemics and pestilences.

Between 1920-1960 world population increased by 51% (between 1950-1960—in one decade, the increase was about 20%). Unprecedented population increase in the Asian region between 1950-1970 has been 50% due to the dramatic decline in death rates.

POPULATION GROWTH RATE BY REGION

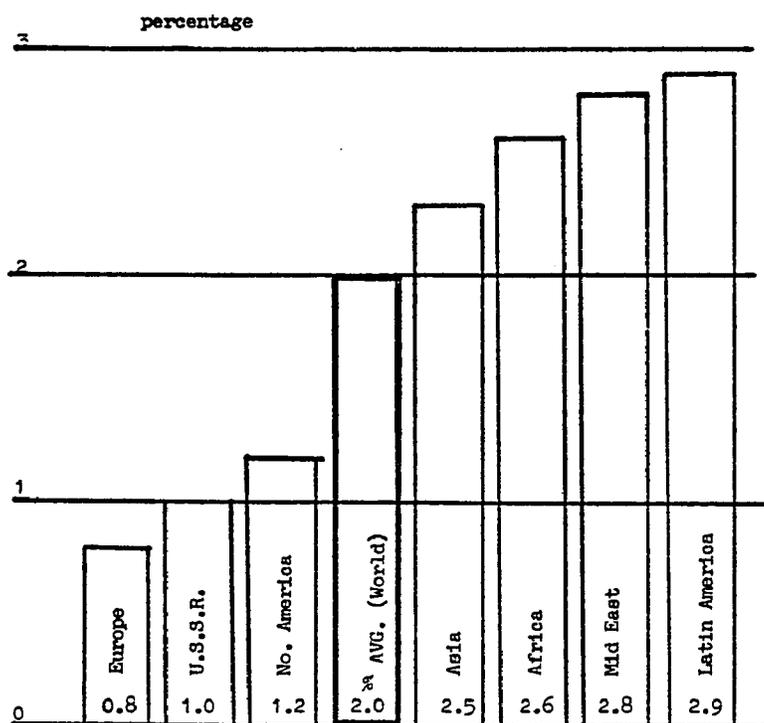


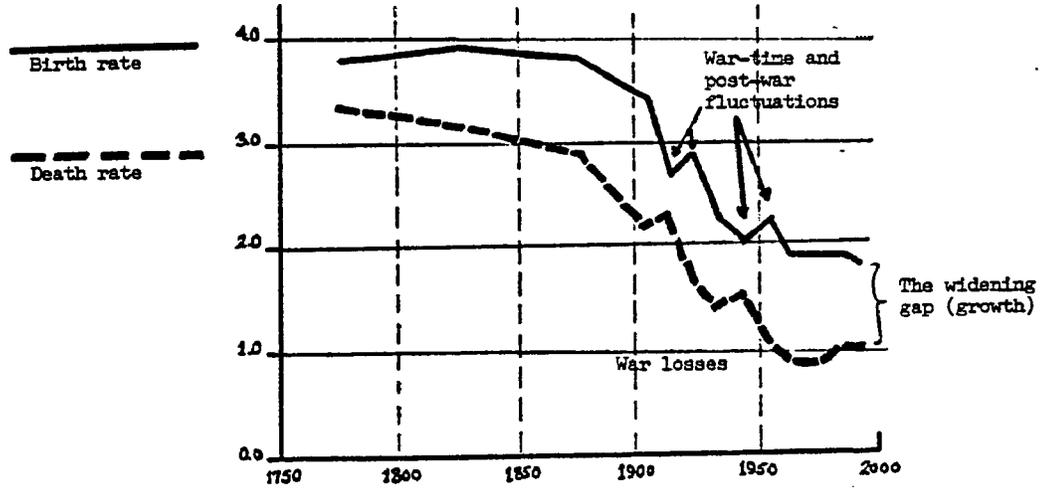
Fig. 4.4

(ii) Population growth rates in different regions of the world today: This is expressed in the form of a bar graph (Fig. 4.4), as presented in the population education curriculum guide package prepared by FAO (1974).

The widening gap between births and deaths causing rapid growth of population in less developed countries and the estimated and projected trends in birth and death rates in developed and developing regions of the world is represented in Figure 4.5., adapted from the UNESCO Sourcebook on Population Education (1975).

ESTIMATED AND PROJECTED TRENDS IN BIRTH RATES
AND DEATH RATES, 1750-2000

MORE DEVELOPED REGIONS



LESS DEVELOPED REGIONS

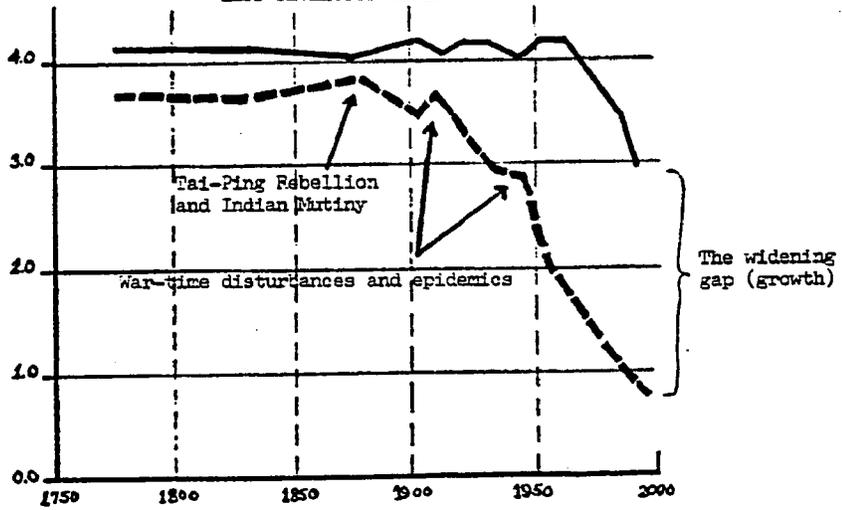


Fig. 4.5

A significant difference between the historic experiences of the two regions of the world is shown by a much greater distance between births and deaths showing the high rate of natural increase in less developed countries.

Jain (1971) discusses this phenomena in the Indian context. He notes that the decline in mortality after 1921 in the developing world has been the main factor responsible for the increase in world population. Abnormal mortalities were controlled by several reasons. He cites improvement in agriculture, techniques of food scarcity relief, control of epidemics and diseases, public health measures, modern factors affecting mortality control, and medical and health services. The population of the developing countries is young. The youth dependency ratio is thus high. Forty-five percent of the population is below the age of fifteen. Most of the developmental efforts are directed toward maintaining a young, unproductive population. The developed countries are characterized by an aging population.

4.1.2. Factors affecting population change:

Popular literature on population growth is mainly focused on the crisis of 'population explosion' of the present day, and fails to provide a total historical perspective on the interplay of several factors operating in the continuum of population changes.

Many educators and scholars, including Wayland (1973) and Viederman (1971) express their concern in this regard. It is very crucial for the population educator to understand the total context and the processes of the population phenomena. Based on the analyses and observations made by UNESCO (the Sourcebook 1975), Sharma (1974), Davis (1974), Oppenheimer (1973) and Mehta (1972), the major factors and processes in population changes are summarized in the following section:

Three main factors affect population change—mortality, fertility and migration. Each is discussed separately.

1. Mortality: Mortality decline is the major cause of the rapid growth of population in the world today. In the less developed countries, changes which took centuries in western Europe are occurring within decades, causing an unstable situation. Following are some of the major factors which contributed to mortality decline in western Europe:

- a. Discovery of new continents, which provided additional sources of food and raw material, as well as an outlet for the growing population,
- b. technological changes in agriculture and development of modern industry,
- c. emergence of relatively stable governments, facilitating better distribution of goods and services,
- d. improved environmental sanitation, which drastically reduced the major causes of death,

- e. developments in modern medicine and public health programs; improved personal hygiene, and
- f. improvement of general educational standards.

In the developing countries the unprecedented rate of mortality decline has been due to a combination of some of the above factors such as technological changes, development and dissemination of modern medicine, public health programs and availability of information.

2. Fertility: The birth rates of developing countries, with the exception of China and the Republic of Korea, are estimated to be higher than the rest of the world. In countries like Japan, Malaysia and Singapore, birth rates decreased by fifty to sixty-three percent in 1970—a decline which took nearly one hundred years in western countries. This has been attributed to rapid technological and socio-economic development.

Factors affecting fertility: In most societies fertility tends to balance mortality levels. These adjustments are not immediate. Fertility values are embedded in the cultural matrix of a society and a cultural lag operates in this adjustment. Fertility levels are affected by several factors, some of which increase fertility while others decrease it. They could be summarized thus:

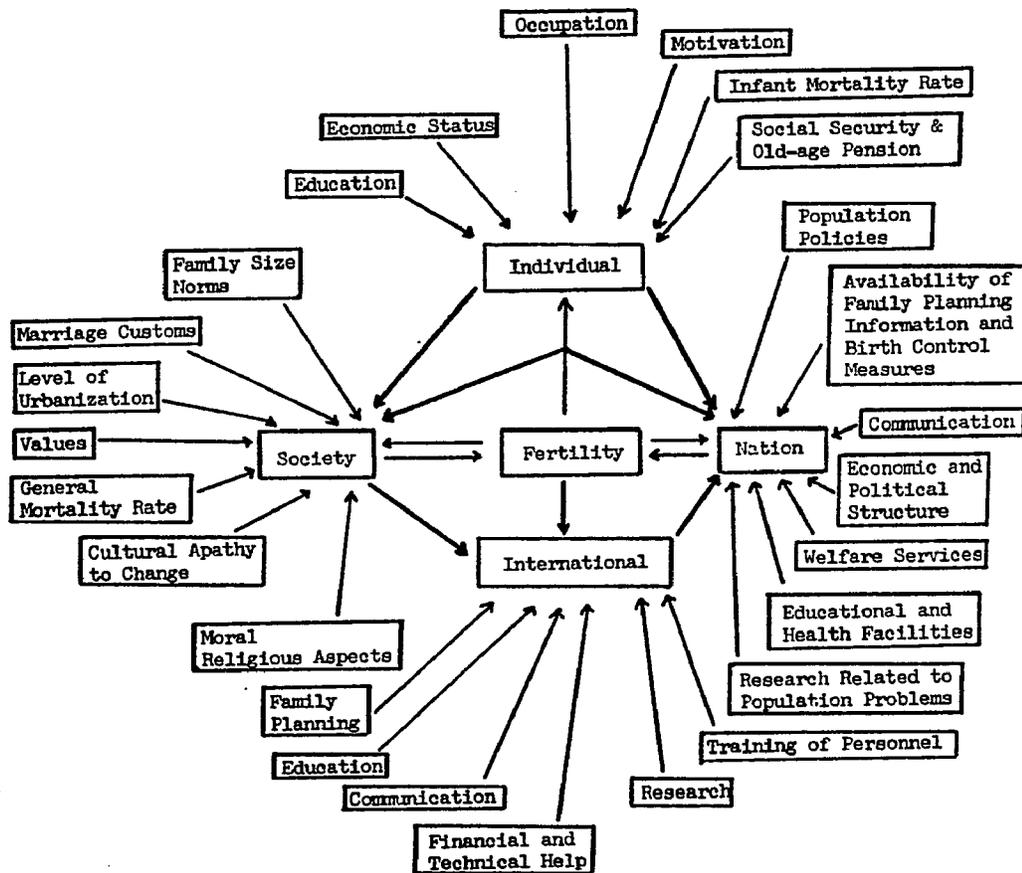
- (a) Implications of mortality decline: More women of child bearing age will survive. As men live longer, the reproductive span of their wives is lengthened. Better health

conditions improve physical capacity of women to bear children.

- (b) Changes in age structure: More women in the reproductive age can increase the number of births as well as crude birth rate, and vice-versa.
- (c) Changes in age at marriage affect fertility.
- (d) Fertility and the socio-economic class: It is generally assumed that fertility values are related to life styles according to socio-economic class. Better educated people, high on the socio-economic level show lower fertility as indicated by the studies made in the Philippines and Japan.
- (e) Fertility and educational level: Education is considered to be an important modernizing force in extending the horizons of general awareness of people, developing rational thinking patterns for planning and decision-making. The factor of education operates in a complex of other factors, not in isolation (Allman, 1973; Viederman, 1978).
- (f) Fertility and urban and rural distribution: The impact of urban residence on fertility varies considerably in Asian countries. In Japan, more young people in urban areas caused population increase in 1965. In other Asian countries rural-urban fertility differences are not very significant. In industrialized countries urbanization seems to have affected fertility in lowering the birth rates.

- (g) In nineteenth century Europe and twentieth century North American and Japan, there was a decrease in fertility in response to pressures of population growth, and a hope to enhance material well being by having smaller families. These responses typically occurred under conditions of increased prosperity; whether increased prosperity is a necessary condition for fertility decline is not yet known.
- (h) Fertility declines in the recent decades in Hongkong, Republic of Korea, Malaysia, and Singapore were due, among other reasons to changes in age structure, increase in marital age and other population measures. Individual responses especially motivated by concern about the population problem does not seem to have contributed much to population decline. In other Asian countries population policies have been slow in showing impact on fertility.
- (i) Fertility and cultural factors: Customs and cultural traits related to marriage, family structure, education and marital age of girls affect fertility. Psychological factors including a fatalistic attitude, lack of self-help or planning for action, dependence largely on the government to improve the conditions with little initiative to help themselves and plan their own and children's future. In Asian countries conditions are changing very slowly to encourage attitudes in favor of smaller families for a happy life. A minimum level of social and economic development seems to be necessary for people to change their outlook.

(j) Over-population: Developed nations have 32 percent of the world population, but produce 82 percent of the goods and services utilizing various available resources. In the developing countries population is much higher than the resources causing overpopulation and imbalance. Equilibrium can be restored by raising resources—a slow and difficult process; reducing population growth is not easy. Both must be pursued simultaneously for effecting change. Sharma (1974, p.105) summarizes the factors influencing fertility in India as follows: (Figure 4.6)

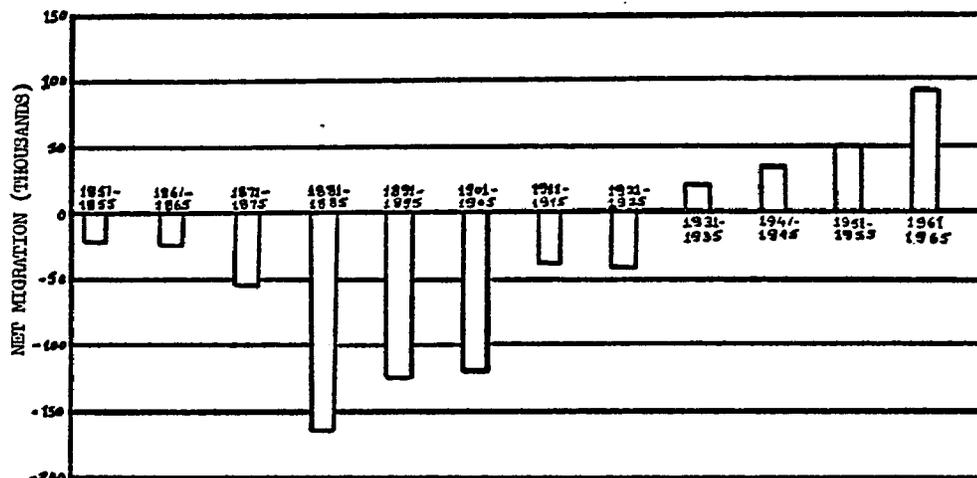


Factors influencing Fertility in India

Fig. 4.6

3. Population redistribution and urbanization: Migration:

Migration is the major cause of redistribution of population in order to gain social, economic and environmental benefits. Geographical and cultural conditions, including preferences, attitudes and individual values, influence migration. It can be between countries or within countries. Patterns of migration among countries have been varied. An example of migration pattern in Sweden between 1851-1970 is presented by Davis (1974, p.97) to illustrate the reversal of the movement in 1931, (Figure 4.7).



REVERSAL in the historic tide of migration in the case of a typical European industrial country is seen clearly in this bar chart, which records net migration in and out of Sweden since the mid-

dle of the 19th century. Before 1930 Sweden was a land of emigration; since then it has been a land of immigration. Other advanced European countries have exhibited a similar migratory reversal.

Fig. 4.7

Migration pattern in Asia is predominantly within the country from rural to urban areas.

- (i) Urban growth and urbanization: Urbanization results from the process of past and present industrial growth and

development, including the mechanization of agriculture. Urbanization has been a slow process in Asian countries. In the United States it is about 73.5 percent, while in India it is approximately 19.9 percent.

Rural to urban migration and natural increase both affect urban growth. Migration, for example has played a dominant role in redistributing population in post war Japan. In south Asia, where migrants are usually composed of young adults, and mortality is declining in the urban population, natural increase shares the main burden of urban growth. 'Push' factors of the scarcity of resources in the rural areas and the 'pull' factors in terms of opportunities in the urban areas, are said to operate causing rural to urban migration. Usually a young, more educated, predominantly male population characterizes this migration.

Oppenheimer (1973) observes that the consequences of urbanization and urban growth have resulted in several problems both in the developed as well as developing nations. Shortage of housing, transportation, sanitation, water supply, pollution, employment, growth of slums, breakdown of extended family structure, and change in value patterns and life styles are some of the problems associated with urbanization and urban growth. Socio-economic factors play an important role in this process.

Urbanization through modernization can affect fertility rates as in case of industrialized nations. It has little impact in the less developed countries.

- (ii) Urbanization and consumption patterns: Oppenheimer (1973), Sharma(1974), Options,(PRB,1973),and the UNESCO Sourcebook (1975) reflect upon the consequences of urbanization and related life styles in case of highly industrialized countries. In the United States, for instance, 70 percent of the population is concentrated in urban areas. Patterns of population distribution are complex. People move from rural to urban areas, from urban areas to suburbs. Several problems result as a consequence of these changes. The growth of suburbs has taken the affluent populations away from the inner cities leaving the poor behind, adding to the issue of segregation. The central city has to bear the responsibility of maintaining a poor population, below the tax base, thus reducing the revenues. Rural depopulation is another fast growing trend, which leaves a concentration of old people who need social service, yet whose incomes are low. This has resulted in deterioration of living conditions, economic decline and outward movement of more and more young people (Options, 1973).

Consumption patterns of highly urbanized and industrial societies have adverse effects on the natural environment

and basic life processes. The developed countries consume different resources at a much higher rate than the developing countries. For instance, the population of the United States grew 33 percent between 1940-1960, but the use of electric power rose almost 400 percent during that time (Oppenheimer, 1973).

Sharma (1974) analyzes the dilemma of the limited natural resources and the consumption of energy in the modern times. World energy production was 7,000 metric tons of coal equivalents in 1970. Almost all the developed countries consumed energy at a rate between 3,200 and 5,900 kilograms of coal equivalents, whereas the consumption in the developing countries was between 25 and 490 kilograms. The per capita consumption of energy in India was only 191 kilograms, whereas it was 11,144 kilograms in the United States, about 53 times more than that of India and about six times higher than that of the world's average. In terms of consumption, an American has 25 times the impact on the environment as an Indian, making the population of the United States to over 5,000 million in terms of 'Indian equivalents.'

4.1.3. 'Macro' and 'Micro' variables in population dynamics:

Cumulative population changes are the result of decisions made at the level of individuals. An awareness and understanding of population variables and their relationships in the socio-cultural context, may assist the individuals in their decision-

making process. The Population Education curriculum guide package prepared by FAO (1974, p.15, 17) utilizes the following diagrams to express these variables (Fig. 4.8) and some of their interrelationships (Fig. 4.9).

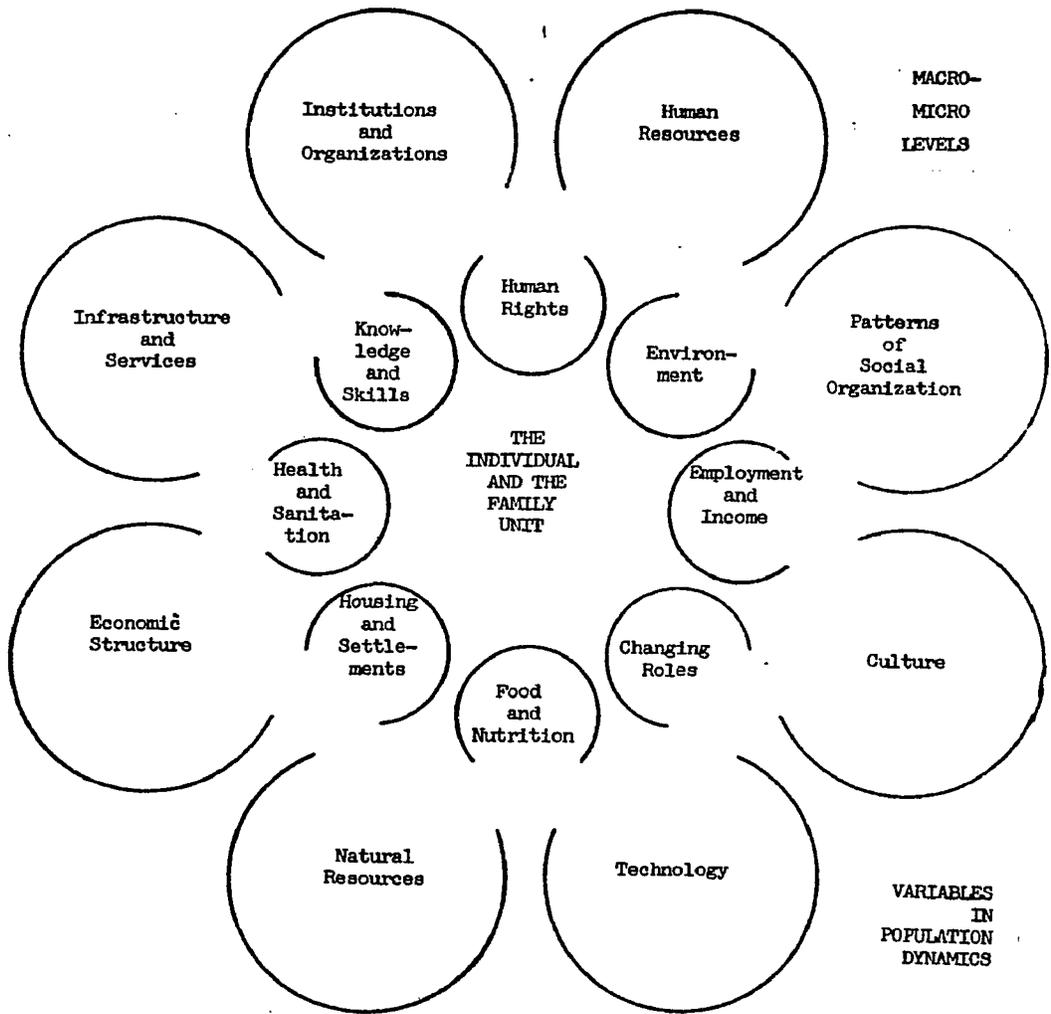


Fig. 4.8

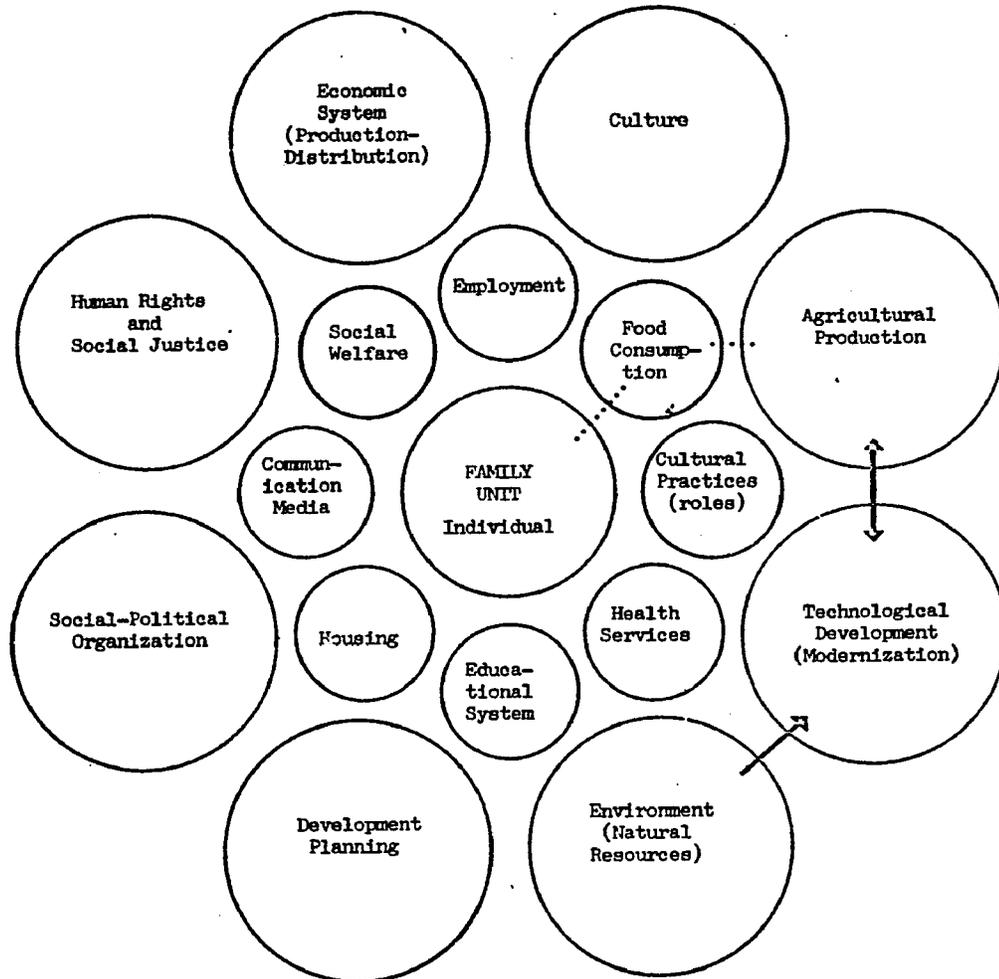


Fig. 4.9

Interrelationship between food consumption, agricultural production, technological development and natural resources

1. Population and 'Quality of Life' issues: Population Education programs being developed in Asian countries emphasize the reciprocal relationship that exists between population dynamics and quality of life of people. Selected areas which represent the external conditions like food, health, education, environment and socio-economic development are some of the basic shared aspirations of nations around the world. Each of these affects

population dynamics and is affected in turn by it. In the following section, these aspects are illustrated briefly, with a focus on the Asian situation. The UNESCO Sourcebook (1975) deals with these issues in greater detail. A few illustrations are selected from this source to highlight an approach to population study.

(i) Population and Food: While population in the Asian region increased at a steady rate and total food production also maintained a fairly steady increase rate, per capita food production showed very little gain due to rapid growth of population as illustrated in the following graph (Fig. 4.10).

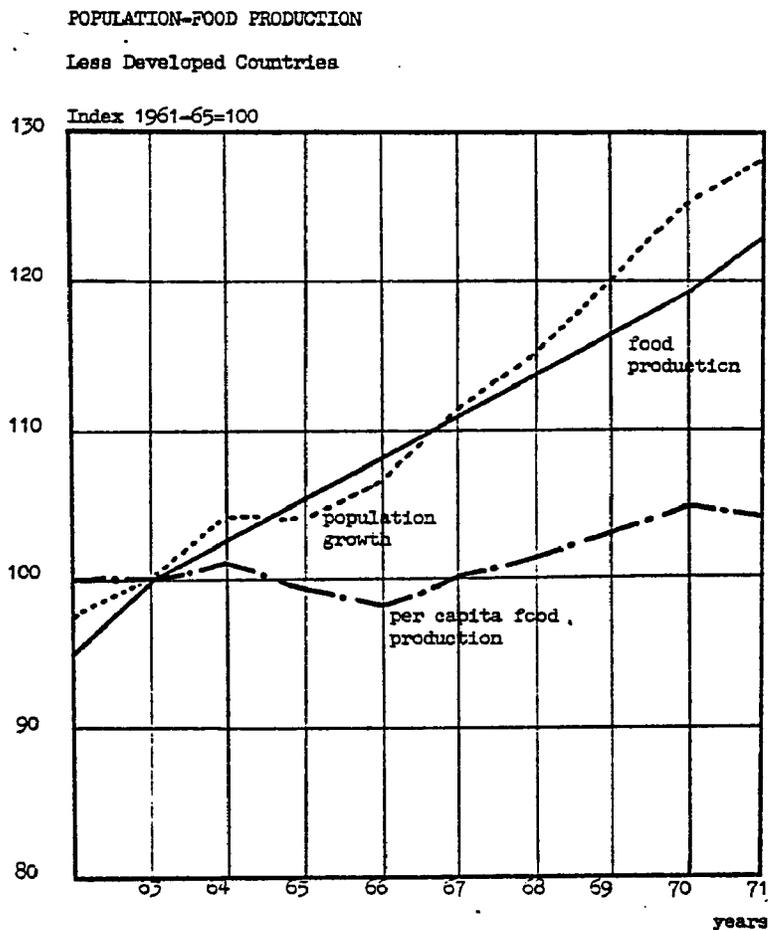


Fig. 4.10

Other variables related to population and food issues are represented in the following figure (Fig. 4.11).

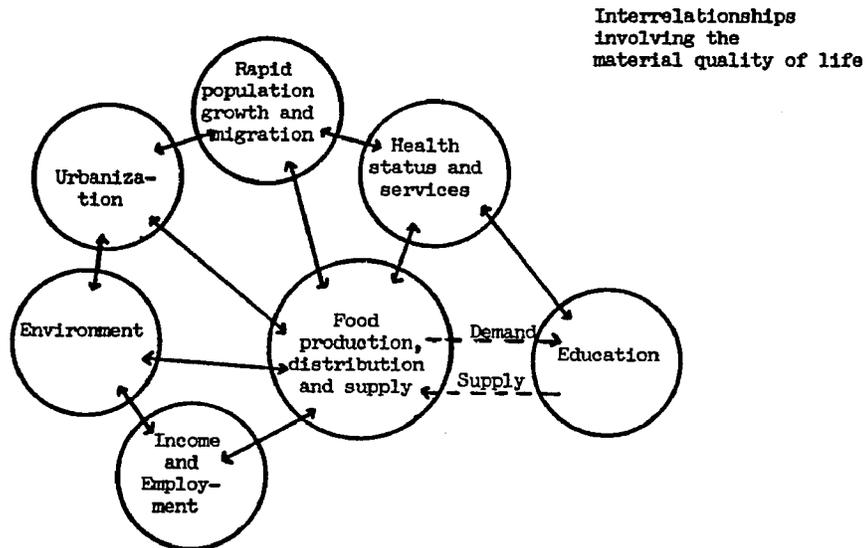


Fig. 4.11

(ii) Population, health, environment and Quality of Life:

Two illustrations are presented from the UNESCO Source-book (1975) as a means to represent the different variables of population, health, environment and quality of life interacting in the population phenomena (Figs. 4.12,4.13).

a. Population, health and Quality of Life:

Figure 4.12 shows the interrelationship between rapid population growth, urbanization and quality of life issues.

(a) POPULATION, HEALTH AND QUALITY OF LIFE

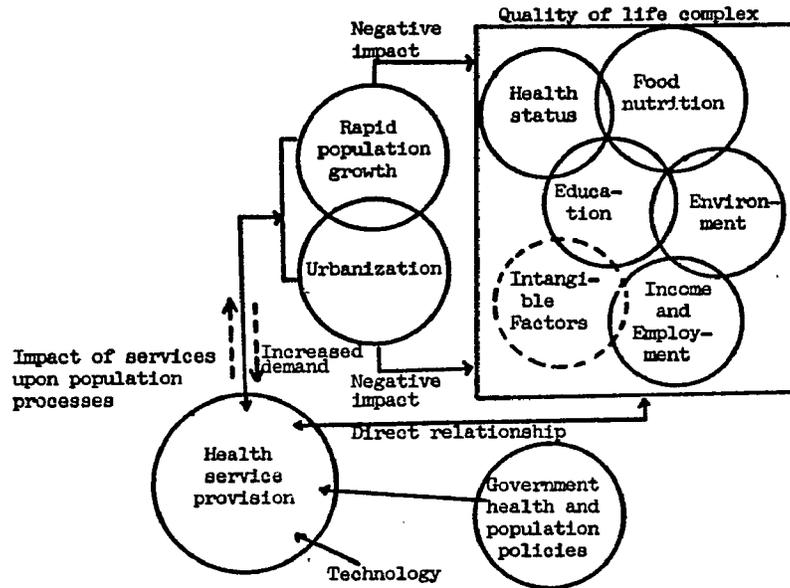


Fig. 4.12

(b) POPULATION AND ENVIRONMENT INTERRELATIONSHIPS

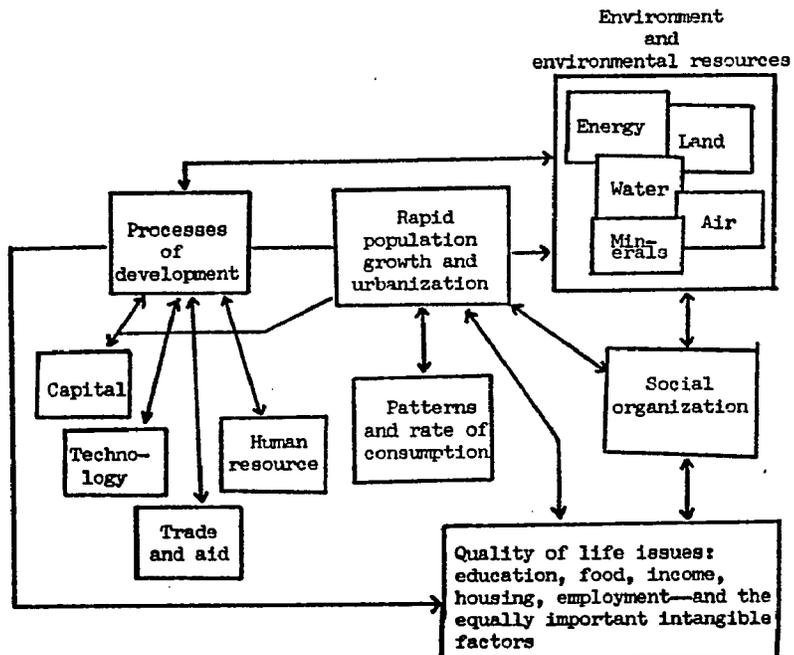
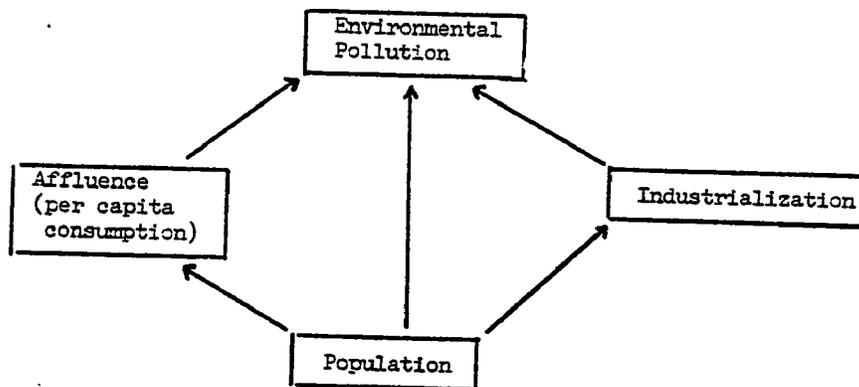


Fig. 4.13

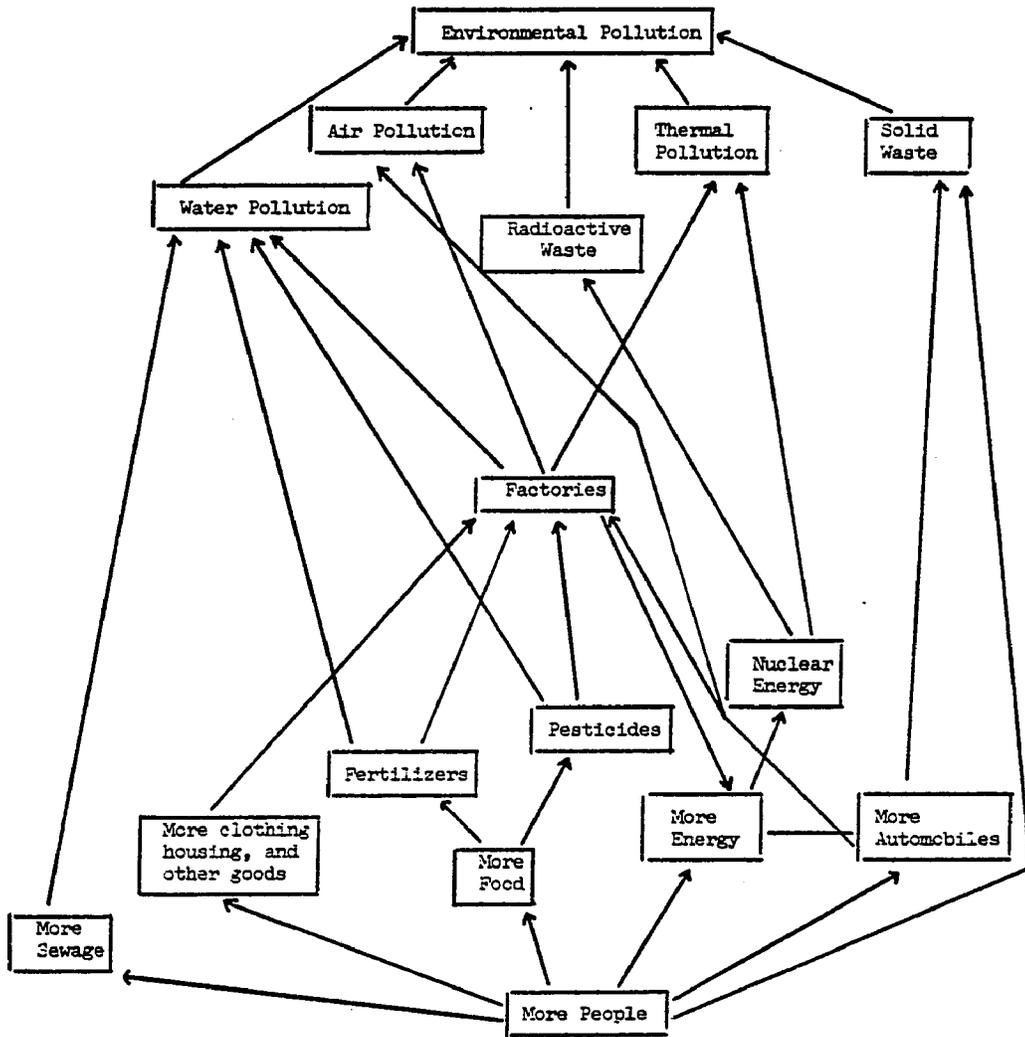
b. Population, environment and Quality of Life: Environmental resources including land, water, energy, air and minerals are affected by migration, urban growth and rapid growth of population. Human consumption and activities affect environment and environmental resources. This is diagrammatically presented in the UNESCO Sourcebook (1975) as shown in Figure 4.13.

The major factors in environmental pollution and the various levels of interrelationships between these factors is presented a little differently by Sharma (1974, p. 247, 249) as shown in Figures 4.14 and 4.15.



Factors of Environmental Pollution

Fig. 4.14



Relationship of Population and Environmental Pollution

Fig. 4.15

(iii) Population and socio-economic development: Population is one of the factors shaping economic and social development. Population growth can have both positive and negative impacts upon economic and social development. It may increase the demands for goods and services, catalyzing investment in agriculture and industry and promoting development. Rapid population growth can be an impediment to economic progress, resulting in unemployment to a growing labor force, as is the case in less developed countries. The resources needed for development are diverted toward maintaining the growing population. Other factors of great significance which affect the development process include: the distribution of wealth within a society, the extent and development of a nation's resource base including human resources and its ability to generate and use capital and technology.

Social and economic variables shape population processes. It has been observed that an improvement in general welfare of a nation lowers the birth rate. The conditions which lead to and result from an increase in per capita income cause a number of social and attitudinal changes which in turn cause a decrease in birth rate. However, there is a time lag between increase in income, social change, and decrease in birth rate.

A population education curriculum guide prepared by FAO (1974, p.38) illustrates the relationship between population and income in different regions of the world as shown in Figure 4.16.

PERCENTAGE DISTRIBUTION: WORLD POPULATION & INCOME
(by region 1961)

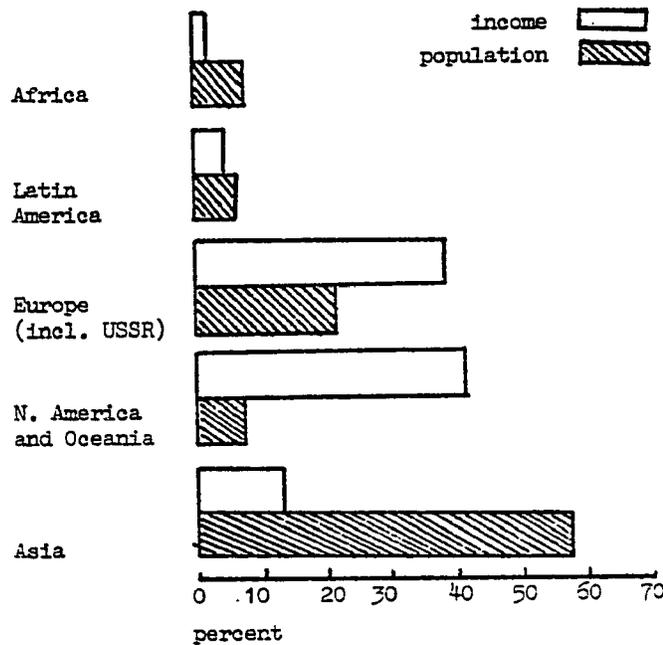


Fig. 4.16

Status of women has been recognized in recent years as a significant aspect related to socio-economic development. This phrase refers to the freedom or control women have over their own lives, the range of choices and options available to them as compared to men in the same society. It relates to socio-economic development in terms of health, education, employment opportunities and the role of

women in family life. Changing roles of women have implications for family size and population growth. The relation of education to fertility makes a strong case for education for women. Their entering into vocational, technical, and professional fields is believed to have an impact on fertility, attitudes, and values.

(iv) Population and Education: Provision of educational services, both quantitatively as well as qualitatively is affected by the population variable. As a consequence of rapid population growth and urban growth, the number of children in school as well as out of school has gone up. Education as a basic variable affects other aspects of life including migration, employment, income and attitudes, and values of individuals. The attainment of educational goals of a nation depends also on availability of resources and level of socio-economic development. While the problem in education in developing countries are aggravated by population increase, in the west, particularly in the United States, population decline and an aging population has forced many elementary schools to close down. The demand for teachers has also decreased.

2. Life cycle events related to population: Individual and family life cycle events with population implications such as marriage, birth of first child, birth of subsequent children—spacing pattern, birth of last child, completed family size and

death, represent the micro-level issues involving decision-making at the individual and family level in these areas.

Life cycle events in all cultures are subjects of traditional beliefs. The special character of the population and life cycle events has relevance for the knowledge base in Population Education, in that it helps the individual to appreciate the relevance of population issues to his own life cycle. Much research is needed in this area of cultural beliefs and social traditions related to marital age, birth and number of children, values regarding children, attitudes toward family size—the traditional reasons for large family and the emerging reasons for a small family. These issues have great relevance for developing countries where family size is related to rural economy, religious beliefs, and social security.

Population decisions and issues cannot be isolated from overall social and economic development. Mortality and life expectancy and their relation to environmental conditions, have repercussions on family size, health and family well being. Lack of adequate diet, education and access to medical facilities are some of the socio-economic factors affecting mortality, family size, and life expectancy.

Most of the data on population is at the aggregate level and is expressed in statistical terms. The task of the population educator is to translate and present these in a simplified form. Various efforts in this direction have included a diversified visual mode of presenting them. The draft curriculum guide

prepared by FAO (1974) includes tables, graphs, illustrative diagrams, and interesting pictorial drawings. Other modes include cartoons, films and slides as teaching-learning aids. These sources have been compiled by Katharine Horsley in the special issue of Social Education on Population Education (April 1972).

4.2. The Educational perspective:

The special features of Population Education as a curricular innovation is closely related to the context of the curricular changes of the past decade and their emerging trends in the developing and developed countries. These developments are described briefly in this section to provide the educational context pertinent to the interpretation of Population Education.

4.2.1. Curricular changes in the developed countries, particularly in the United States occurred in response to the needs of a rapid and technological transformation of society and several events and factors extraneous to the educational system which pressured curricular changes. Curriculum reforms in natural and physical sciences, introduction of family life education, vocational education and sex education are examples of such a response (ERIC, Environmental Education Report, SMEAC Abstracts, 1972). Developments in the field of science, psychology and social sciences had an impact on curriculum changes. The fifties and sixties were a period of curricular reform in science, mathematics and social studies. Environmental education was in

response to the call for relevance in education in the sixties.

Tanner (1971) and Goodlad (1966a) discuss the pedagogical innovations in methodology, instruction and evaluation techniques as a result of new orientations and conceptualizations in different curricular areas. Educational ideas such as interdisciplinary and multidisciplinary approaches, team teaching, open school, application of educational technology and emphasis on cognitive as well as affective aspect of knowledge began to influence curriculum changes.

The seventies have been marked by growing awareness towards the management of innovations within the concept of systems analysis and planning, and towards a global perspective in the curricular areas (Social Education, special issue on Global Perspectives in Education, Vol. 41, No. 1, 1977). Efforts in terms of problem-oriented education, futures education, and life-long education are being expressed by various educators. Wood (1974), Toffler (1974) and Shane (1974) review these trends on the American scene.

4.2.2. In the developing countries faith in education is in the hope for better economic prospects and modernization. Significant progress has been made during the past three decades in the expansion of education for the vast majority of people. Despite these efforts, rapid growth of population has affected both quantitative and qualitative aspects of education. A major educational issue has been the incongruity in the educational approach

toward national goals and aspirations of youth. In India, the reason for this lies in the imported models of education designed primarily for the urban elites, emphasizing strong urban bias, causing rural to urban migration and high enrollment in urban educational institutions. The curriculum is academic and subject oriented and evaluation is based on rote learning and outdated examination system. The changes proposed by the government take time to get diffused to the state and local levels. Efforts to bring about changes have begun with a reorientation of the science and social science curricula in the sixties (Wayland, 1965).

In spite of several constraints, high priority has been given to education in the national developmental plans. In view of the educational needs of the developing countries educational reforms are being proposed and guidelines set with the help of international efforts. Report of the Asian Program of Educational Innovation for Development, UNESCO (1973) describes the evolving trends in education. These are summarized as follows:

1. Education traditionally has been treated as a structured set of institutions. There is a growing awareness of the need to utilize all resources of the society including out-of-school educational settings.

2. New orientations and structures are proposed on the concept of 'learning to be' and education as a life-long process.

3. The diversity of student population in terms of abilities, aptitudes and aspirations is being emphasized in the planning of education.

4. The focus in the learning process is shifting from factual memorization and rote learning to the nurturing of skills and attitudes of investigation, critical inquiry, observing, analyzing, communicating, testing, evaluating, interpreting and the application of knowledge to future actions.

5. Relevance, appropriate techniques in goal formulation and integrative systems approach to curriculum planning and innovation are being strongly advocated.

6. Training of personnel and teachers from 'ideal-urban' models to those for diverse educational situations, in the role of counselors, community leaders, change agents and teachers for non-formal settings is being recognized as a necessary dimension of these changes.

This preceding discussion of the emerging trends in educational proposals for the developing countries will facilitate the appraisal of the role of Population Education in the renovation of education with its curricular and pedagogical implications. Population education symbolizes the convergence of many emerging trends in education, such as relevance, interdisciplinarity, life-long education, futures in education, values education and non-formal education, including the methodological convergence of various instructional techniques. Analysis of the

concept in the present research takes into consideration these unique characteristics and their implications.

4.3. Summary

The dimension of population dynamics projected most in popular literature is that of the rapid rate of population growth in demographic terms. Population changes and processes occur and operate in a continuum of historical, geographical, social, cultural and ecological factors. It is the context of these interrelationships and interactions of the demographic and the non-demographic variables affecting the quality of life of people within which Population Education assumes meaning.

The present chapter was devoted to spelling out the broader meaning of the term population. This was done through i) the explanation of basic demographic terms, ii) review of the world population situation in a historical perspective, iii) a brief discussion of factors affecting population change and iv) examples to illustrate the interrelationship between population and micro and macro variables. In education, the content of the subject matter, and the means of presenting it, the process, both are of great significance. The intent of the chapter was thus also, to provide illustrations from various means and modes through which population data and concepts can be presented and interpreted. Educational trends in the developing and developed countries with relevance for the interpretation of Population Education were briefly presented to provide

the educational context within which this concept assumes validity as an educational idea.

A contextual treatment of the kind presented above would have been unnecessary if the study was related to a specific disciplinary area with which teachers and educators are familiar. An exercise in the interdisciplinary and conceptual study of a curriculum innovation of the nature of Population Education, made the present chapter an imperative stage in developing the theme of Population Education in a well formulated educational perspective.

The next chapter was devoted to the various interpretations and views on the concept in terms of rationales, definitions, goals, scope and content of Population Education. Two questions—why? and what? of Population Education were analyzed.

CHAPTER 5: THE CONCEPT OF POPULATION EDUCATION

5.1. Rationale and definition

- 5.1.1. Rationale
- 5.1.2. Definitions
- 5.1.3. Common emphases in the various definitions

5.2. Goals and objectives

- 5.2.1. Goals and the goal components
- 5.2.2. Factors in goal formation
- 5.2.3. Factors related to the process of 'decision-making' in Population Education
- 5.2.4. Objectives for different educational settings: illustrations
- 5.2.5. Guidelines for goal formation

5.3. Scope and content

- 5.3.1. The scope
- 5.3.2. The content
- 5.3.3. Content for Population Education
- 5.3.4. 'Population Studies' for Population Education

5.4. Population Education and other educations

5.5. Summary

CHAPTER 5

THE CONCEPT OF POPULATION EDUCATION

Documents from several countries, specifically, India, the Philippines and the U.S., and the UNESCO publications were analyzed in terms of rationale, content and methodology, to answer questions, such as—, why? what? and how? of Population Education. This examination was based on the content analysis and conceptualization procedure described in Chapter 3 on Methodology, and against the 'contextual' frame of reference developed in Chapter 4 on the 'contextual paradigm'. The analysis resulted in the following observations:

5.1. Rationale and definition:

5.1.1. Rationale:

A need for Population Education has been perceived in different perspectives as is evident from the following viewpoints:

(1) Population Education as related to the population situation: The rapid growth of population:

In recent years population growth has become one of the most crucial of human problems. Asia exemplifies this problem in its acute form. The dimensions of the problem are gravely illustrated by the population situation in India. To put this in a simple language, India is one-third the size of the U.S.A., but has a young (45 percent of the population below the age of 18) and growing population equivalent to that of the U.S.A., the U.S.S.R. and Japan

put together. By the end of the century with a growth rate of 2.2. percent it will reach one billion from 623 million today, doubling in approximately twenty-eight years.

The governments of countries of the Asian region, almost without exception, recognize the need to adopt policies to slow down their rates of population growth, at the governmental level or through private organizations. India was the first government to adopt family planning as a national policy in 1952. One of the objectives of these programs is to make people appreciate the advantages of a small family norm, through educational motivation programs. The educational activities of the family planning programs focus mainly on transmission of information, and are directed toward adult populations. An urgent need to educate the younger generation, the parents of tomorrow, in population matters, has resulted in the initiation of school programs in this area (Wadia, 1974; Jayasuriya, 1972).

A comprehensive view of the rationale for Population Education for the Asian region is presented by UNESCO (1971, p. 10):

The basic premise underlying the conception of Population Education is that the consequence of population development for the social and natural environment and vice-versa are of such significance that a new generation of young people need to become aware of them. Implicit in the assumption is that the future course of human history can be managed in such a fashion as to provide a higher quality of life for all....The essential quality of life can probably only be achieved through the actions of all people in the society rather than a few select groups. Individual and

national development demands that people comprehend the possibilities of alternate ways of acting and that these alternate behaviors be carefully selected... Education is one element that can be used to help develop new behaviors.

(2) 'Population Education' as related to the environmental situation:

A different perspective was expressed during the National Conference on Population Education, (PRB, 1971, p. 9):

The field of Population Education has evolved as the significance of population issues in the contemporary world have become more apparent. To cope with and improve life in our complex environment, people must understand the basic forces at work in a constantly changing ecological system. In order to grasp how demographic trends affect this system one must first understand how they interrelate with the forces of technology, political and economic institutions and cultural values. Population literacy then entails an understanding of the consequences of population change on this system and of alternative courses of action to be taken both at the personal and societal levels.

(3) Population Education as related to the life styles of people:

Population Bulletin (PRB, 1970) presents yet another concern in the industrialized nations. The nature of high technology, super consumption and the wasteful economics related to the life styles of a people of a highly industrialized society has created a 'demographic-technologic-environmental-consumption' complex of issues, which deems it necessary to educate the people to better understand their roles and responsibilities, and make rational decisions regarding these issues.

(4) Population Education as related to the role of education:

It was observed during the national seminar on Population Education in India (NCERT, 1969) that the role of education is to help citizens to meet the challenges and demands which arise from changing social situations. Students have a right to accurate information pertaining to population matters as they relate to their lives. Such an education should be included at all levels of education. According to Viederman and Wayland (1972), the considerable gap between students' concern and the knowledge of the population processes and their consequences offers sufficient justification for the introduction of Population Education programs, in order for them to achieve an 'informed concern' for rational decision-making. Raising the level of population literacy could contribute to the creation of an atmosphere and forum in which this important public issue can be discussed and debated.

(5) Educators' interest in Population Education:

Educational systems are particularly affected by population changes. In spite of a tremendous expansion in schools, educators face difficult problems. Examples include, the increasing numbers of school age young people in two-thirds of the world, their aspirations and a need to provide them with universal education, and the increasing

number of out-of-school young people, The educators' interest in developing curricula dealing with areas of human experience of great relevance makes them view Population Education as a proposal to the needed curriculum change for relevancy. Besides, a subject of such a great public significance cannot be ignored by educators.

Educational appropriateness of Population Education is indicated by Wayland (1969) who observes that its potential content involving both social and biological sciences can be adapted to several curricular approaches.

Reflecting on the emergence of Population Education in the U.S., Wayland (1975) observes three developments in the 1960's that initiated a move in the direction of incorporating issues of human relevance in the curriculum--(i) the growing awareness among a set of people about the significance of rapid population growth in the developing countries; (ii) the growth of youth culture which called attention to the negative aspects of the technological developments for their image of a higher quality of life and, (iii) the emergence of consensus among the large sector of the American people about environment. In the sixties, a trend away from the more highly discipline centered innovation was reflected in the rallying cry for 'relevance' in the student movements. Population concerns were brought to the domestic level. The linkage of

population to environmental problems became evident through several publications and programs.

5.1.2. Definitions:

The phrase "Population Education" denotes the emergence of a new educational concept and has different meanings depending upon the socio-political state of a region. Efforts are made to analyze and set forth definitions of Population Education to identify some of the universal components of this concept:

A definition may be a description of what is or a statement of what might be. In population Education, the definition falls within the latter category—'a vision of the future', rather than a picture of the present (Viederman, 1974).

1. Search for a 'term': Inclusion of population matters in the curriculum was initially urged by demographers and population specialists, such as Hauser (1962) and Thompson (1962) in the U.S., and family planning personnel, as in India (Population Education in Maharashtra State, a Memorandum, 1968). This impetus arose not within the educational system but outside of it. Inevitably, there was a terminology confusion, as this new concept was misinterpreted to be diluted demography for school children, family life or family planning education and sex education. It was referred to as 'Population and Family Education' (UNESCO, 1971), 'Population learning' (Poffenberger, 1971), 'Population awareness' (Burleson, 1969), and 'family planning' education (FPAI, 1969), in search for a term for the new curricular concept.

Wayland proposed the term 'Population Awareness Education' or 'Population Education' for this new interdisciplinary area, not to evoke any 'negative' responses by the educators and the public, and the goals and content of which were different from sex-education; family planning or family life education.

2. A UNESCO seminar defined Population Education as:

An educational program which provides for a study of population situation in the family, community, nation and the world, with the purpose of developing in the students, rational and responsible attitudes and behavior toward that situation, with the purpose of assisting learners to make more responsible and informed decisions about population matters as they affect their future quality of life. (Modified version, as presented by Johnstone, J.A., p. 174 in 'Pop. Ed. in Asia', FAM. PLAN. POP. ISSUES IN AUSTRALIA, IPPF, 1974)

The assumption made in this definition is that inclusion of population matters in the curriculum will lead to change in behavior and to more rational decisions. The definition focuses on the very relevant issue of what decisions do young people make in any society which have population repercussions, or what body of information establishes the making of a more informed decision in population related matters. For example, when to leave school, when to marry, when to have the first child, subsequent spacing of children, family size, whether or where to migrate and so forth. The above decision-making areas have to do with individual perception of circumstances and the alternative futures involved as repercussions of particular decisions.

3. Yet another formulation of a definition was reached by a group of graduate students in Education, as presented in

The Structure of Population Education prepared by Mary Turner
Lane and Ralph Wileman at the University of North Carolina
(1974, p. 5).

Population Education is the study of people as they live in families, in villages, in cities, and in nations, here and now and in other places, other times and in future. It is the study of basic needs and how they are met, jobs and how they are provided, income and how it is distributed, natural resources and how they are used, services and how they are financed, as well as human sexuality, human reproduction and family responsibility. It is collecting and interpreting data, as well as examining attitudes, values, customs and mores. It is thinking about quality of life and sorting out ways to achieve such. It is establishing relationships, dealing with cause and effect and exploring options. It is the means whereby students can be helped to make responsible decisions as members of a family, a community, a nation and a world.

The language of the definition is clear, specific and avoids any 'jargon' or 'loaded' terms including value exploration to value clarification, presenting Population Education as an open objective inquiry.

4. Wiederman (1974, p.4), who has followed and studied the evolution of the concept closely, defines Population Education as:

...the educational process which assists the individual (1) to learn the probable causes and consequences of population phenomena for himself and his communities (including the world); (2) to define for himself and his communities the nature of the problems associated with population processes and characteristics; and (3) to assess the possible effective means by which the society as a whole and he as an individual can respond to and influence these processes in order to enhance the quality of life now and in future.

The emphasis in this definition is on 'learning', and assumes that individuals are more concerned about consequences as they affect their life and focuses attention on those things that the individual can do as a member of the society in order to

influence population changes for his own benefit and for the benefit of the society.

In all the above definitions four common elements can be recognized—(1) identification of an educational process, (2) reference to a knowledge base from which content is to be drawn, (3) formulation of a general purpose of this education, and (4) a specification of the behavioral outcomes which are anticipated, indicating that the definition is to have universal applicability. A differentiation is made in this analysis of the definition, between the substantive area to which Population Education refers and the general purposes and behavioral outcomes desired. The first of these can be stated in terms which are essentially universal, but the purposes and outcomes cannot be so stated. In this sense Population Education is considered analogous to other aspects of school curriculum, such as social studies education, science education or mathematics education as applied to a recognized substantive field.

5. An academic definition: Based on the discussion in the preceding section, an academic definition of Population Education is derived through an inquiry into its content and process, the two dimensions which are drawn from several disciplines. UNESCO (1970) refers to the range of intellectual activities in several disciplines utilizing population variable as 'Population Studies' in an interdisciplinary context. Nagda (1975) refers to it as 'Population Science' in a multidisciplinary context. This is

not a tightly integrated body of knowledge and represents a general substantive field, such as biology, social studies or mathematics. The translation of this into a curriculum could be referred to as 'Population Studies Education' or 'Population Education', which can then be defined as 'a particular set of goals and objectives, conceptual organization and content, and the teaching methods, which are worked out, to be used in a particular learning situation dealing with the subject field of population studies.' In this view there is no universal definition of Population Education (Population Education, A SourceBook for Asia, UNESCO, 1975).

6. International Study for the Conceptualization and Methodology of Population Education, under the sponsorship of UNESCO (ISCOMPE, 1976- draft copy, p. 79) proposes an itemized definition, rather than a single collapsed definition, in view of the diversity of approaches and perceptions defining this concept.

Population Education

- is a part of the total learning process
- is a problem centered process
- derives its content from population studies
- is concerned uniquely with the interactions of the individual and the society and is
- oriented specifically toward the improvement of present and future quality of life, in both individual and societal terms.

Population Education is NOT

- a closed prescriptive program
- family planning education or an education in demography or ecology
- concerned only with population processes at either the individual or societal levels but with the interaction between these levels.

Population Education is thus an educational process not concerned with training population specialists, rather it is directed to individuals as family members and as citizens in various capacities.

5.1.3. Common emphases in the various definitions:

A review of the programs in different countries of the world shows that definitions carry varied emphases on different aspects depending upon the perspectives and perceptions of the population phenomena and their consequences. Viederman (1973) identifies some of the common features of these definitions, even though detailed emphases differ:

1. The focus is on the relationship between population dynamics and the quality of life both for the individual, and the society, including the family and community at large.
2. There is focus on both the cognitive and affective learning—a concern for knowledge and the learning of skills, as well as exploration of values and attitudes.
3. The content is multidisciplinary or interdisciplinary. Demography is an important source, but Population Education is not demography for school children.
4. The specific goals and objectives of the program, and the cultural and educational traditions of the country determine the selection of the concepts and data to be included or excluded.
5. Concern is expressed, in principle, for the whole range of population factors, such as migration, age structure

mortality and distribution, in spite of the popular focus on rapid population growth as the key issue.

6. The concern for 'rational and responsible' behavior and attitudes is defined in terms of developing understandings of the consequences of individual's own behavior for himself and society.

7. Emphasis is on an educational approach, rather than coercion, to achieve the goals of motivating students in decision making and to act.

8. Citizenship role of the school is emphasized in the relationship that exists between population and the public policy.

9. Particular attention is directed to the student's own milieu—his village, city, state, nation or world, emphasizing the fact that 'macro' level perception for students coming from different localities like a small village or a big city, perceptions will be different. These perceptions have to be kept in view to present distinctive processes most familiar to the student.

5.2. Goals and Objectives:

Population education views population not just as a problem to be solved, but a 'phenomena' to be understood in terms of the nature and magnitude of the problem, if any, including governmental policies and individual actions that might be necessary and effective (Bhatnagar, 1972). Obviously these individual decisions and

actions will be made, not in the isolated atmosphere of the classroom, but in the emotionally charged socio-psychological context. The course of action chosen will be developed during the process of coming to understand the problem in its relationship with various factors that can change individual quality of life.

5.2.1. Goals and the goal components:

According to ISCOMPE (UNESCO, 1976- draft copy), the components and the factors involved in the process of goal formulation in Population Education can be summarized as follows:

(1) to provide learners with a knowledge and understanding of the population dynamics and processes, so that they understand the consequences of these for their families and communities.

(2) to provide learners with the knowledge, skills, attitudes and values necessary to evaluate the impact of population changes both in terms of the present and future welfare of their families and community.

(3) to assist learners to make conscious and informed decisions, based on knowledge, attitudes and values attained, both personally and socially in regard to population matters as they affect the welfare of their family and community.

(4) to provide learners with the knowledge, skills, attitudes and values that might enable them, in a conscious and informed manner to respond to the population situation and the changes occurring.

5.2.2. Factors in goal formation:

The translation of these general goals into specific objectives will result in considerable diversity, reflecting:

- a. Population policy, public beliefs and attitudes about population matters.
- b. Multiethnic background.
- c. Institutional constraints as to what could or could not be taught, for instance, objectives merely to 'provide information' or to 'create awareness'? General goals sometimes omit culturally sensitive matters which are seemingly logical areas of relevant knowledge.
- d. Goal explication and attainment is also affected by a failure to express objectives in performance terms, specific skills not identified properly and values and attitudes not specified.
- e. A value-fair, value-free or value-oriented approach will also affect goal formation. ISCOMPE emphasizes a value-fair approach.
- f. Goals will have to be related to the maturational level of students, and their social and cultural context.
- g. Goals will not explicate methodology or approach which will be decided by national or local Population Education organizers, curriculum developers, teachers and learners.

5.2.3. Concepts related to the process of 'decision making' in Population Education:

The general goals, such as a final outcome of the educational effort, postulate a response to population issues in the form of conscious and informed decision making, aware of the personal and social consequences, and capable to deal with alternative futures. The viability of this response will depend on the fact whether it leads to improvement of the quality of life, both at the individual and societal level.

In the classroom setting, the response may simply be an indication of intent to act, while in a non-school context the response may involve more overt behavior. School programs incorporate long-range goals and objectives with future orientation.

Life cycle events include decisions in areas, such as if and when to marry, if and when to have the first child, family size, whether or not to migrate, when to leave school, when to enter the labor market, when to cease supporting education of children, when to retire and so forth. These decisions have impact upon the operation of population dynamics. The reality of decision-making in the life cycle events is influenced by customs, mores, traditional role perceptions, religious beliefs, and similar factors constraining the individual and collective decision-making, both in industrial and traditional societies. Many of these barriers are breaking up gradually, due to increasing education of women, and in general, liberalization of marriage laws,

emergence of nuclear family structures and related social change. Economic and political factors also affect the decision-making process.

Johnstone (1974) in his critical observation with regard to Population Education in Asia, comments on the concept of 'decision-making' in Population Education in those programs. In a fair number of societies in Asia, the young woman may not be the 'population decision maker', which so many programs assume. Grandparents, in-laws, husbands and peer groups exert pressure. Current educational programs assume that young people can critically assess population issues and can make decisions independent of social pressures. Evidence is to the contrary. In the conception of the Asian program, Johnstone feels that the educators will face the problem of relevancy. How relevant is the notion of a small family when there are no obvious trade offs between the number of children and improved quality of life.

He goes further to suggest that Population Education should focus on the purpose of assisting learners to make informed decisions about population matters as they affect their future quality of life. The body of knowledge in this area will be related to the individual perceptions of circumstances, the 'folk-demography' and the alternative futures involved as repercussions of particular decisions. Ideally such a content would deal principally with those population related life cycle decisions which fall to every human being and which to a greater or lesser extent affect every human being's quality of life. In Johnstone's

view macro-demographic studies, bearing upon national, societal and economic development are not likely to be relevant to the life and living of individuals and families. Knowledge at the micro level is very meagre. Extensive research has been advocated by several authors including Viederman (1972c) and Johnstone (1972, 1974).

5.2.4. Objectives of Population Education programs for different educational settings:

The following section presents selected illustrations of the general and specific objectives within different educational settings and population perceptions.

1. Objectives for a rural education program, FAO (1974):

Population Education for a rural education program seeks to increase awareness and understanding of:

- (i) basic demography processes as applied to one's family, country, and the world;
- (ii) effects of population change and growth on the social, economic and environmental life of the society; population and family size pressures on quality of life factors; such as food and nutrition, health, education, housing and employment, and human rights and social justice;
- (iii) dynamics of population that the individual affects through his personal behavior: age of marriage, birth of first child, spacing of children, move to urban area; and those dynamics of population that

affect him as recipient or member of society; population growth rates, dependency burdens, social-economic conditions, etc.;

- (iv) broad policy issues such as population and land reform, or more narrow issues relating to use of national family planning services, for example.

The focus of these objectives is on family welfare at the micro level.

2. Objectives for a school program in Population Education:

UNESCO (1971):

Objectives for a school program as developed by UNESCO center around three elements--determinants and consequences and the demographic processes of the population changes in the Asian context, with the added concepts of human reproduction, population policies and attitudes and behavior toward micro and macro level population matters. These objectives are formulated as follows:

To assist the pupil to acquire knowledge of:

- a. Basic demographic concepts--location, collection, manipulation, interpretation of demographic data. Birth, death, migration and growth rates, age structure and composition; quality of population data
- b. Population situation--history of population changes locally, nationally and worldwide. Role of science and technology in causing decline in death rates. Trends

of population growth in relation to family, community, nation and the world

- c. The determinants of population growth—fertility, mortality, migration. Social, cultural and psychological factors
- d. The consequences of population growth at micro and macro level—relationship between population growth and socioeconomic development, maternal and child health, availability of services, psychological and sociological consequences of high population density, ecological consequences, availability of food
- e. The human reproductive process as a basis for understanding human fertility
- f. The national and international population policies and programs
- g. Rational and responsible attitude and behavior toward family size national population programs, toward life cycle events pertaining to the family and toward population.

The treatment of the subject matter in these objectives is at the macro level, expressed in cognitive terms, based on the assumption that attitudinal aspects are inherent in the cognitive objectives.

3. Yet another emphasis in the objectives illustrated in a broader population-environmental context for a K-12 school

program in Population Education developed at the University of Delaware, in the U.S. (Population Curriculum Study, University of Delaware, 1973):

The underlying objective of the conceptual scheme of the Delaware program are based on six major themes. The objectives of the program can be formulated as:

- a. to show that earth is a finite natural system, and that there are limits to the system,
- b. to relate man to the natural system, and to show that the evolution of man resulted in a capacity for culture,
- c. to indicate man's dependence on the natural system, and to show that the natural system influenced the evolution of human culture,
- d. to describe man's uniqueness and power, and his dominance of the environment as a result of the cultural evolution,
- e. to develop awareness of population—environment problems, and show how the activities of human population may lead to conditions restricting the quality of life,
- f. to suggest some alternatives, and to show that by planning within the natural system, a life of acceptable quality can be provided for all people.

5.2.5. Summary: Guidelines for goal formation:

Based on the discussion on goal components and objectives in Population Education, the following considerations can be

summarized as guidelines in the formulation of Population Education goals--(adapted from ISCOMPE, 1976--first draft). They should include:

- a. Statement of broad intent and purpose
- b. Identification of general population concerns to which the program is addressed
- c. Subgoals or components of the goals with regard to audience to be reached, content to be learned/taught, methodologies used in teaching learning, resources, and methods of evaluation
- d. Indication of the changes in population related knowledge, attitudes and values desired
- e. Indication of the types of skills to be fostered to attain given level of decision-making and response
- f. Posting the range of decision-making and the types of responses desired
- g. Identification of the constraints and methods of overcoming them.
- h. Determination of the needs of the learners, their interests, capabilities, past experience and the extent to which the learner will be capable of making informed and conscious decisions and responses.

5.3. Scope and content:

The educational settings which have a role to play in a total Population Education program are varied. Primary and secondary schools, teacher training institutions and universities have always

been a focus of attention. But increasingly both in the developing and developed countries interest is being expanded to include extension and out-of-school Population Education programs. Given the varied kind of audience with their needs and life circumstances, the different stages of development of the learners, it is unlikely that any single institution can handle the entire range of content. The audience of Population Education includes children, adolescent university youth and young adults falling into many other sectors such as industrial workers, welfare centers, women's associations, youth clubs, corporations, agriculture societies and others.

Jayasuriya (1974), in his observations with regard to the need for Population Education in different educational settings, notes that it is necessary to recognize that Population Education may have to be introduced into:

- (i) a wide variety of training institutions, e. g. universities, and within universities into professional courses, such as teacher education, social work, public health, medicine and agriculture and into non-professional courses such as those in liberal arts, etc; other institutions, such as teacher training colleges, schools of nursing and those concerned with the provision of courses for personnel entering into fields of work such as rural development.
- (ii) a wide variety of training programs conducted outside a formal institutional set up, such as—training programs for cooperative workers, home economists, agriculture extension workers, labor welfare officers and so on.

5.3.1. In the analysis presented by Wadia (1972, 1974a) the scope of Population Education has been demarcated into two major categories of formal and non-formal education. In the formal education, it is an innovation to include a type of knowledge, not within the boundaries of traditional curricula, relating it positively with the lives of students. This involves a vital and imaginative approach to the range of subjects to be covered, the teaching techniques demanded of problem-solving presentations, grading of materials to suit the age groups, the curricular approaches, teacher training and administrative procedures. Basic population data are included in many of the school subjects, but these are limited in scope and do not deal systematically with the consequences of population dynamics for the social and natural environments.

The planned, sequential Population Education programs, which had their beginnings in the early 1970's, have adopted the 'infusion' approach through the various school subjects. Other approaches, including units, separate courses and curricular activities are also being proposed and developed (Bhan, 1972). Wadia (1974a) emphasizes the concern that to tie in Population Education too neatly into school curricula may have the result of children 'learning about' the subject as such and not 'understanding and changing.'

In the developing countries, the non-formal settings provide a wide range of educational opportunities. These programs are

implemented through community channels, along with other developmental measures, such as, extension activities in health, agriculture and community development.

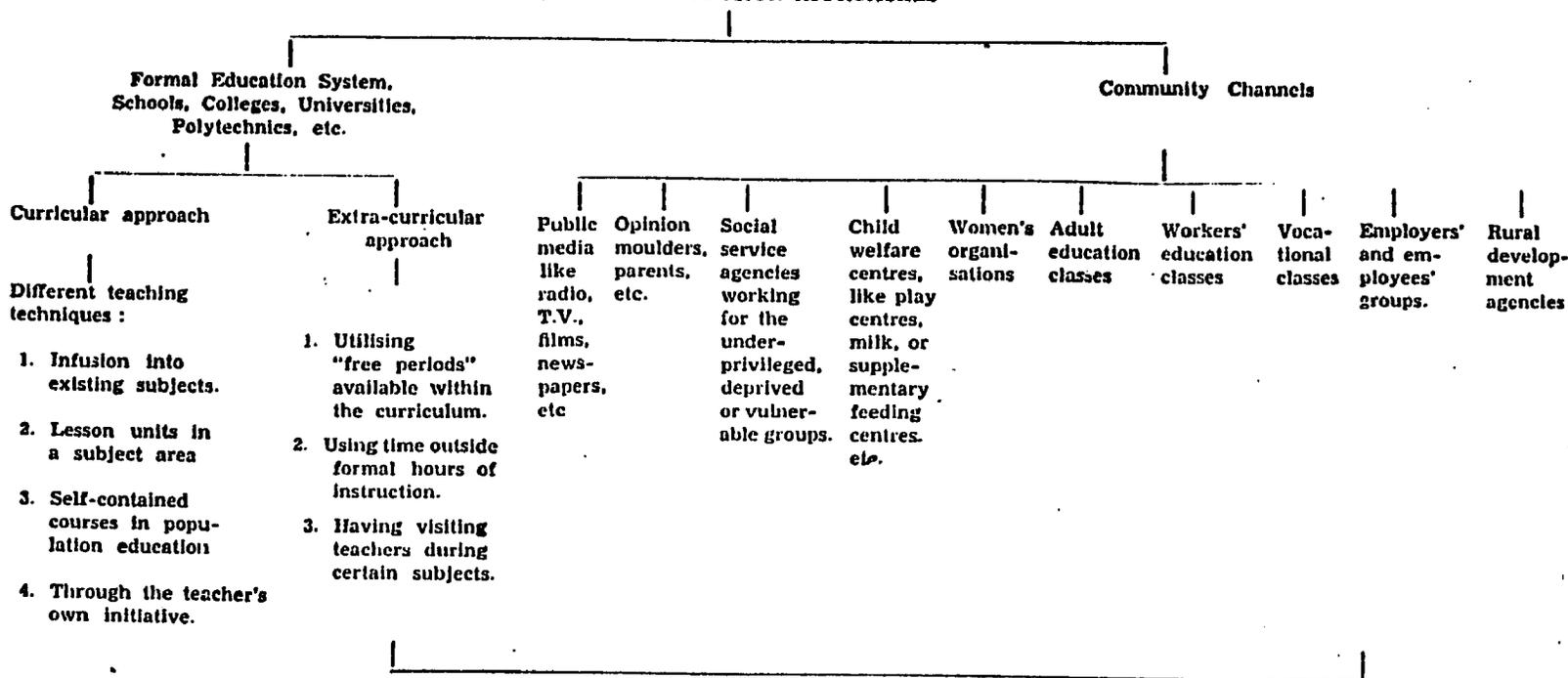
Until recently plans for developing Population Education programs, whether school or non-school were developed independently of one another. However, stemming from the growing awareness that learning takes place in different settings and at different times, Population Education planners are now beginning to look at the educational system as a whole including school and non-school.

5.3.2. The content:

The central concern in Population Education being the consequences of population factors on various aspects of social and natural environments and the alternative choices available to individuals, families and nations, the content will include a background knowledge in these areas. It will also include a wide range of social phenomena linked with population, and the psychological bases of behavior in the demographic processes.

The broad range of the scope and approaches to Population Education are summarized by Wadia (1972), in the following table: (Table 5.1)

POPULATION EDUCATION APPROACHES



Types of teaching-learning activities :

1. Talk-and-discussion method.
2. Role playing, simulation exercises.
3. Games, "happenings".
4. Observation trips to villages, slums, forests, wild-life sanctuaries, etc.
5. Preparing exhibits, setting up experiments.
6. Use of audio-visual aids.

Population Education Approaches

Table 5.1

(1) Major sub-areas:

In considering the potential content of Population Education, Jayasuriya (1972) proposes to adopt the approach of looking at it in a total perspective that would bring within it whatever appears to be logically related to it. Five broad areas within which the content appears to fall are demarcated:

A. The collection and analysis of population data, including the methods of collecting, analyzing, and interpreting population data.

B. Population growth and human development—population growth and variables such as land and natural resources, agriculture, food, housing, employment, economic development, and education and health services. At the micro-level, the topics to be considered would be the impact of family life cycle decisions on the quality of life in the family and aspects of development of the individual.

C. The problems of urbanization

D. Psycho-social aspects of human sexuality and the reproductive process.

E. Population planning

Mehta (1972) lists the following content areas included in the programs of developing countries:

(i) Determinants of population growth

- (ii) Population situation—statistic and dynamic at the micro and macro level, including population growth and urbanization.
- (iii) Consequences of population developments—economic and social development and population changes
- (iv) Human reproduction, family life and population, psychological aspects of human fertility
- (v) Population policies and programs—national and international

In view of the general objectives of Population Education, Wayland (1973) identifies the following five sub-areas as the major content components in Population Education:

1. The internal interrelationship among birth, death and migration rates, with resulting changes in the composition and distribution of population—forming the base element for understanding the other dimensions. For example in understanding the growth rates, the size of dependency population and thus on the capacity to attain social goals.

2. The characteristics of human reproduction and the patterns of mortality and fertility as biological processes in their own terms and as phenomena seriously conditioned by social institutions and practices. An understanding of the relative significance of each and the interplay between the biographical and social processes is essential as background.

3. The impact of changes in population characteristics on the attainment of familial and societal aspirations for a

higher quality of life, involving food and nutrition, health, education, social welfare, economic well-being, satisfactory living environments, and the family and national security. The population related behavior of individuals has an impact on the attainment of these aspirations.

4. Changing population characteristics affect the natural environment. This also should include the knowledge of basic ecosystems, the level of technological development, the life styles of people, consumption patterns and the values related to exploitation of natural resources.

5. The public response to population issues, which may include programs designed to change or limit the rate of growth, educational programs dealing with population policies and alternative approaches by the public to formulate and implement basic population policies.

(2) A schematic matrix as presented in Table 5.2 was suggested by Viederman (1975, p. 62) for analyzing and identifying the content of Population Education based on the assumption that to the extent possible, each individual should receive the maximum amount of information, limited only by the level of his/her intellectual development and capabilities.

Table 5.2

Matrix for Analyzing and Planning the Content of Population Education Programs

The Content of Population Education		Population and the Quality of Life Including:											Action Programs		Human Reproduction					
		The Population Situation					Food	Health	Education	Employment	Urbanization	Environment	Socioeconomic development	Family life	Public. pol. & programs	Individ. & fam. choices	Human physiology	Human sexuality	Human conception	Fam. plan. & contra-
The Educational System	Universities																			
	Teacher-training Institutions																			
	Secondary schools																			
	Primary schools																			
	Out-of-school youth prog.																			
	Adult education																			
	Literacy programs																			
	Community development																			
	(As above plus)																			
	Rural	Agricultural extension																		

5.3.3. Content for Population Education:

Aspects of the content areas for Population Education are found in a wide range of academic disciplines and professional fields, including biological and social sciences. These are organized around their own concepts and problems. The task is to select from these areas, relevant concepts and data and recast them into a coherent, integrated curriculum to meet the needs of the learners at all levels, from decision-makers in the village to high level personnel. The relationship of these knowledge sources to the content for Population Education is discussed in the UNESCO Source Book (UNESCO, 1975). A brief account is given below:

(a) Academic disciplines:

Demography: Provides with the basic demographic tools and concepts in the understanding of population processes, such as, fertility, mortality, migration, growth rates, age structure, composition, marital and employment characteristics, static and dynamic description of population situation in historical and future perspective.

Sociology and anthropology deal with population related matters, life cycle events, role relationships, social mobility, and role of social institutions. The 'folk-demography' of people is another aspect related to these areas.

An important perspective in Population Education is provided by psychology and social psychology focusing on indi-

vidual needs in their micro-economic context and the social norms, pressures and constraints--affecting population behavior and decision-making. Economics and political science provide knowledge pertaining to relationship between population dynamics and national developments, government and public policies and citizenship role of the people.

History provides past population trends, a basis for future projections and in the understanding of the present population situation. Natural sciences provide a perspective on the relationship between population and environment, natural resources, food, energy and other factors in the ecosystem related to lives of the people. Biological sciences provide understanding of the processes of human reproduction related to population biology.

(b) Professional fields:

Medical sciences provide knowledge about physical, mental and emotional health, about diseases and the role of medical sciences in the decline of death rates. It also provides knowledge concerning physiology of reproduction, means available in the careful management of reproductive behavior, including contraceptive technology, useful research on fertility, and events related to pregnancy and health of the mother and the child.

Other professional fields which contribute to the content base for Population Education include: home economics,

social and economic planning programs, urban development, rural and community development, transportation, family planning, agriculture and related fields. These demand knowledge about population issues and in turn enlarge our knowledge as regards to interrelationship between population processes and socio-economic development.

(c) Other sources:

Population data available from sources besides the academic and professional fields include, national and sub-national censuses, report on vital statistics (such as births, deaths, marriages and morbidity), migration records, periodic surveys with population implications, such as housing and other documents.

Population-related information other than nationally published data, is assembled and published regularly by the United Nations and its specialized agencies generally derived from national sources. (Population Education, A Contemporary Concern, ISCOMPE, UNESCO, 1978)

5.3.4. 'Population Studies' for Population Education:

Scholars from various fields have an interest in population. Demographic factors receive attention at selected points in many different fields of study like history, economics, sociology, geography and others, and may form a part of the general background for a single discipline, or may center around

specialities on population in many fields, like demographic anthropology, population biology, human geography, statistics in the field of health, economic planning, city planning, and so forth. This wide range of intellectual activity, all of which utilizes population factors as key variables, and contributes to the knowledge pertaining to human population phenomena is termed as Population Studies. It is not a tightly integrated body of knowledge, but nevertheless, forms a closely knit range of activities, and can be used in much the same way as the terms such as biology, mathematics or other subject areas are used as a content base for curriculum development in different subjects.

The general substantive field of population studies, then, forms the knowledge base or the content base from which concepts and data for Population Education are selected and translated into the curriculum for Population Education. In this sense Population Education refers to the curriculum dealing with population studies, and its content will vary in different educational systems, selecting national and educational goals.

In the case of Population Education, the meaning of the term 'content', therefore, assumes a special significance. According to Wayland (1972b, p. 4), there are three ways to interpret the term—

Content as knowledge base
Content as school subject matter
Content as educational experience

or, another way to identify these three is to distinguish between

- A. Content for Population Education
- B. Content of Population Education
 - 1. Subject matter of Population Education
 - 2. Educational experience in Population Education

In identifying the content areas in Population Education, knowledge base refers to the content for Population Education, from which the content of Population Education will be drawn for curricular purposes. Formulation and organization of a knowledge base, thus, becomes a major step in the process of curriculum development in this area. This issue will be examined in greater detail in the next chapter in view of the special qualities of this curricular innovation.

5.4. Population Education and other educations:

Population Education shares some areas of content with other educational activities, such as family life education, sex education, media education, environmental education and development education, but is not an euphemism for these educational fields. Characteristic features of these fields is presented to clarify this misinterpretation:

5.4.1. Population Education and the Information-Education-Communication Concept:

Informal learning through various media has an impact on school and non-school learning, but the difference has to be borne in mind. A media specialist is involved in transmission, not interaction, and tends to be prescriptive, the goal being

motivational for a particular decision. Most of these activities are closely related to family planning activities. However, the activities of Information-Education-Communication and Population Education are supportive (UNESCO, ISCOMPE 1976 draft copy)

5.4.2. Population Education and Environmental or Ecological Education:

Both of these areas are interrelated, but the frames of reference are distinct. Environmental education are programs aimed at producing citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution. (Bouvier, 1975)

5.4.3. Population Education and sex education:

The scope of sex education includes anatomy, physiology of reproduction and psychological differences between the sexes. The aim is to develop in learners a self-understanding of one's sexual nature and needs, changing sex roles and the place of sex in an individual's personal and family life and to assist the individual to make responsible decisions in regard to sexual behavior. The focus is primarily on the individual. The concept of sex education originated in the west as a result of different social circumstances than from which Population Education arose. (Rao, 1974)

5.4.4. Population Education and family life education:

The content of family life education includes topics pertaining to dating, marriage and parenthood and developed in the west, out of the growing evidence of disintegration of family and family role problems. It has been defined as an educational activity to develop the ability of family members to carry their roles effectively, to enhance communication, and to improve quality of family life. (Rao and Rao, 1969)

5.4.5. Population Education and 'Developmental Education':

The term developmental education incorporates three inter-related and yet distinct bodies of contents, those relating to the problems of development, the processes of development and the means whereby learners can be made more responsive to these problems and processes. The issues of development relate to the macro level, and to the impact of policy measures on the individual. Developmental education is concerned with the causes of underdevelopment and the promotion of new international economic order, social justice and social and economic development of the underdeveloped world. The focus in Population Education is on the interaction between population variables and the broader issues and emphasizes human rights with human responsibilities.

5.4.6. Population Education and demography:

Population Education is not a school curriculum in demography. Demography provides the basic tools to analyze population dynamics. Population Education does not deal with

population as an academic discipline, but as a human and social phenomena. One of the historic functions of the educational system has been the effort to restructure the conception of problems in a fashion which introduces elements and relationships which may not initially seem important to the people. Their definition of the population situation may disregard the operating relationships and processes. For example, growth is not the only aspect of population, and the understanding of growth itself requires adequate consideration of various other dimensions. A task of the demographer is to assist the educator to redefine and restructure the public definition of the problem, so that all the aspects receive appropriate attention. To this extent demography has to contribute to the goals of Population Education, but the goals of both these areas are not the same (Wayland, 1972c).

5.5. Summary:

Chapter 5 discussed the various viewpoints on the rationale, definitions, goals and the content of Population Education. The factors and criteria related to goal formation were examined to identify the major guidelines in their formulation. Content for Population Education is drawn from several areas. This issue will be analyzed in greater detail in the next chapter. Finally, the relationship of Population Education to some of the other curricular areas was presented to point to the overlapping and sharing of contents among them. The next chapter is devoted to the knowledge base issues, its formulation and organization as one of the crucial curricular strategies in Population Education.

CHAPTER 6: KNOWLEDGE BASE ISSUES IN POPULATION EDUCATION

- 6.1. Characteristics of Population Education as a curricular area
 - 6.1.1. 'Population' as a field of knowledge and Population Education curriculum
 - 6.1.2. Other distinguishing features of the innovation
- 6.2. Knowledge base for Population Education
 - 6.2.1. The problem of an unformulated knowledge base
 - 6.2.2. Organizing the knowledge base
 - 6.2.3. An interdisciplinary analytical model for organizing the knowledge base
 - 6.2.4. Concept of 'folk demography' and knowledge base
- 6.3. Population studies as knowledge base—a new synthesis
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 - 6.3.2. Alternative frameworks
 - 6.3.3. The underlying orientation in various frameworks
- 6.4. The process of transformation from the knowledge base to the instructional materials
 - 6.4.1. The UNESCO model
 - 6.4.2. The ISCOMPE model
- 6.5. Summary

CHAPTER 6

KNOWLEDGE BASE ISSUES IN POPULATION EDUCATION

In the traditional nature of curriculum innovation, a systematized body of knowledge is available on which a curriculum specialist can draw for curriculum development. In the case of Population Education this poses a problem. As an applied aspect of education (Rao, 1974), it relates to human problems and does not fall into any academic category, referring to a substantive field of instruction for which the scope and foci are not apparent from the usual meanings attached to the term 'population.' As noted in the preceding chapter, identification and delineation of the potential content base for Population Education is a prerequisite stage in developing curricula in this area.

Some of the aspects of this innovation are common with other educational innovations and the strategies used in their case is appropriate in the instance of Population Education. It is some of the distinct properties of the innovation which have special relevance to the formulation of a knowledge base. The present Chapter six examines some of those special features. In the absence of a comprehensive document, the curriculum developer and population educator will have to refer to a wide variety of sources to develop a conceptual scheme for the organization of the knowledge base.

An attempt has been made in the following section to facilitate this task.

6.1. Characteristics of Population Education as a curricular area:

6.1.1. 'Population' as a field of knowledge and Population

Education curriculum:

Lynton (1974), identifies five characteristics of 'population' as a field of knowledge which influence Population Education curriculum.

1. Population is a value-laden field for study, is controversial and exposed to political and religious attack. This aspect has been critically examined by educators, including Veatch (1972), Sugimoto (1974), Viederman (1973b), Rao (1969), Burleson (1969), Brown (1972), and Kuppuswamy (1971) to name a few.

2. Population study represents a major aspect of the study of social issues. It is problem oriented, with various aspects of population dynamics related to various actions and services in the sphere of social issues.

3. It is interdisciplinary, involving various academic and professional fields of study.

4. Many important decisions concerning population are reached by large number of people in the privacy of their homes. Population phenomena represents the cumulative actions of these individuals. Their motivations, social norms and the role of culture are very central in population studies.

5. Population study focuses outward on people—at home, at work, and in action. Widely distributed information,

feedback and private decisions become part of the general body of knowledge. In the case of population, 'all have some knowledge, and collaborative study is an essential component.' This is different from the classical teacher/student model in which an educational institution is perceived as the owner and dispenser of knowledge.

Another significant and least widely understood aspect of the population phenomena is its momentum--the tendency of population to continue growth even after fertility has declined. The basis for this resides in the age structure, the potential parents in the population, and is determined not by the governmental policy but the logic of mathematics (Tietelbaum, 1974). Hence policy makers are expected to think beyond the next developmental decade. This extended 'time-horizon' and futuristic orientation of population processes require a special approach to curriculum content and process. This issue has been discussed by Wayland (1972d), Jayasuriya (1972), Mehta (1969a), and Tietelbaum (1974), among many other educators who are working in the field.

Positions taken on population are varied. Sugimoto (1974) discusses the two main points of view--the 'coercionist' and the 'developmentalist', which demarcate the two extreme positions in population. As observed by Tietelbaum (1974), Sugimoto (1974, and Tabariah (1975), a consensus is gradually emerging at the international level from the either/or dilemma

which holds that policies and programs are required both for general development and for specific population concerns. The efforts have to be complementary in the overall developmental context. In this view population cannot be understood as an isolated factor. The UNESCO Source Book (1975), in developing guidelines for curriculum development, emphasizes the factor of natural linkages which population has with other issues, such as resources, environment, public service, rural-urban migration and opportunities for women. This makes the sources of knowledge base for Population Education very broad with linkages to several disciplines.

6.1.2. Other distinguishing features of the innovation:

Some of the other distinct curricular features of Population Education, which have significant bearing upon the formulation of the knowledge base are identified as follows:

- (i) While in the past, curricular changes were confined to the subjects and were based on a 'cognitive' model, Population Education is closely related to an interdisciplinary 'affective' model (Hertzberg, 1971).
- (ii) Population Education is a significant aspect of the population as well as the educational policy. In the population context, it can create better awareness of the range of population issues and possible outcomes of various population decisions. In the educational context, in its concern for the present and the future,

it will provide relevance to various disciplines. As an important dimension of 'life-long education' it will contribute to both formal and non-formal educational settings. (ISCOMPE, 1976, first draft). In the view of Wayland (1974), Population Education represents a planned curricular innovation with implications for the total educational context.

- (iii) As noted by Wayland (1975), there is a wide range in the scope and depth of treatment which is possible under the rubric of Population Education. A single instructional unit in the 12th grade social studies program in a particular school or a national program with a number of units in each year of a school system might be considered a Population Education program.
- (iv) The contents of these programs are also varied, such as, population and environment (Delaware project), social studies content (Florida program) and programs emphasizing demography. In the Philippines, units are included in social studies, mathematics, science, health education and home economics. The syllabus prepared by NCERT, India, includes concepts from social sciences and biological sciences to be infused in various school subjects at all levels. In the U.S., the Baltimore program has an urban focus. Carl Heuther and Willard Jacobson have emphasized the natural

science aspect. Sex education is a significant component in the science-oriented programs of the University of Michigan (Wayland, 1975).

- (v) A brief review of the various concepts involved in Population Education is presented to highlight the dimensions of the potential knowledge base, based on the ISCOMPE study (UNESCO, draft copy, 1976). Besides the cognitive and substantive aspects, concepts such as rational decision-making; alternative choices available, and real life constraints; relevance; cultural-conflict; quality of life; individual and social interactions; issues of persuasion and prescription; inter-personal relations; participation; and relation to other educations are the many nuclear components of Population Education, which assist in defining the parameters of the knowledge base for Population Education.
- (vi) Population Education is described as education for social responsibility, for population literacy (Viederman, 1973) or as 'citizenship education' — a concept which has been redefined in the newer social studies, to include value analysis and value clarification. It views an individual not just as 'a good citizen', but as an 'evolving individual', carrying out the act of thinking, feeling, valuing, choosing and doing (Taylor, 1974). In this perception,

there are no expectations or requirements of Population Education for entrance to college or university systems. Such potential vertical linkage is absent. As such, Population Education represents a general education requirement for everyone (Wayland, 1975).

The foregoing section was devoted to enumerate some of those specific characteristics of Population Education which are closely related to the problems of knowledge base organization. In the following section these problems are critically confronted in order to provide a process for its development.

6.2. Knowledge base for Population Education:

Knowledge base refers to the established body of concepts and data in a particular field of intellectual endeavor. In the context of Population Education, it refers to that body of content and data related to population matters from which the curriculum developer can draw from the substantive aspect of his curriculum designs, (Pop. Ed., a Source Book, UNESCO, 1975, p.5).

According to Viederman (1974) based on his review of world wide programs, the knowledge base in population will include information on the following:

- (i) the population situation, such as size, growth, migration, distribution and composition;
- (ii) on the relationship between population and the quality of life, now and in future, with respect to such topics as food, health, education, employment, urbanization, the environment, socio-economic development, the

political system and family life;

(iii) on the possible action programs at both the governmental level and on the personal level and,

(iv) human reproduction as a means of implementing one aspect of individual action, covering physiology, sexuality and family planning, including contraception, and the ways of dealing with infertility as appropriate.

Both macro and micro level data will be included. In addition to these areas, other emerging issues, such as the role of women in population and development, the role of youth, labor, mass media and religious bodies have also been identified as part of the knowledge base (Burleson, 1974). Cultural factors, exploration of values and attitudes as they relate to these areas constitute an essential component of the knowledge base.

6.2.1. The problem of an unformulated knowledge base:

There is no organized existing discipline which synthesizes a body of knowledge for Population Education, no 'textbook' to which one can refer. The existence of a textbook, as in case of economics or physics means that the body of knowledge is sufficiently well developed to permit a systematic organization of the concepts and data. Reviewing the state of the art, Wayland (1972b) observes that there is no specific term like "home economics" or "psychology" to refer to the content area of Population Education. For instance, in home economics education, home economics refers to the content area.

'Population' in this context as a term does not have the same relatively clear referent. It is understood that population is a broader term than demography, but given the historic linkages, many have assumed that it must mean education focused on the discipline of demography with its academic partner 'population.'

The general and specific problems related to the unformulated knowledge base have been analyzed at great length by Wayland (1972, 1973), Johnstone (1974), Sharma (1974), Lynton (1974), UNESCO Sourcebook (1975), NCERT (1969, 1972) and FPAI (1969, 1972) seminars and several other authors. These observations can be summarized as follows in view of the needs of a curriculum developer and population educator.

(1) The vagueness of the referent for 'population':

This has led to some misplaced assumptions. Some assume that the term Population Education has been selected for political reasons to avoid the controversy which would arise if the real focus were made explicit. Thus, the assumption is sometimes made that the real focus is sex education or birth control education and the use of the term Population Education has been devised to cover up the controversies in this area.

(2) Conflict in the interpretations expressed by publicists and scholars: In the case of population matters, a more balanced orientation to the issues is made difficult by the dramatic selected aspects presented in the popular literature. Scholars have raised objection to this and emphasize that the

broad character of the issues get lost in the narrowly conceived perspectives by the media. These different viewpoints have special significance in establishing curriculum content in Population Education.

(3) Lack of consensus among scholars: Natural scientists, social scientists and demographers have different perspectives on population issues. Some natural scientists with major concern about the ecosystem and the problem of survival in the organisms, have stated their case in doomsday tones. Social scientists draw attention to the social institutions and the capacity of the cultures to adapt when the environmental problems begin to impinge on social systems. Part of the difficulty also arises through the interdisciplinary nature of the area. Some of this conflict may consequently get resolved as new interrelationships develop.

(4) Limitations in the knowledge base: Much of the data and concepts in population study apply to collectivities, such as nation, city, states, rural-urban differences and so on. The scholarly work on the impact of population factors on the social and natural environment has not been extensively developed. Micro level data in several areas, such as the consequences for individuals of having different size families, the values associated with small families—whether these are universal values; correspondence between values as experienced by the family itself and for the society as a whole; are there

circumstances in which large families may be of positive value to the family itself, but of negative value to the society? If so, what are these circumstances? All these and other micro level issues have not been investigated fully. A gap in the knowledge base also exists regarding the knowledge and attitudes of young people and teachers in population matters. Mahapatra (1969), points to the inadequacies of the research data. Most of the studies in population are based on very concrete categories of people, such as 'rural', 'urban', 'city' and so on, without taking into consideration the diversity of backgrounds to which people belong, the many cultural, sub-cultural, religious and economic factors operating in the population.

In this situation of individual versus social perspective the instructional program is faced with the need to personalize instruction and to aid in examining the degree of convergence in the attainment of personal and collective goals.

(5) Extended time-horizon: Population is a time based subject. The nature of population dynamics is such that changes in population related behavior are not seriously felt for relatively long periods. Population learning begins informally before individuals enter school, through family and peers and continues throughout life. Man has not been psychologically prepared to confront a problem which will require generations to solve. This long-term time perspective presents a serious pedagogical problem, particularly when long range planning is

not a cultural pattern—either in family planning or societal planning.

(6) Population as a value laden area: Any curriculum area which touches on basic values poses a special problem for education. Societal values, the values of the teachers as well as students are involved. In an area as potentially value laden as some aspects of the population, a sharp differentiation between the cognitive and affective areas cannot be made. Attitudes and the values held by the people are important data in their own terms. Furthermore, the interpretation of other types of concepts and data will to some extent be influenced by prevailing value systems. The affective aspects as a part of the goals and objectives and dimensions of the instructional process call for a different body of knowledge.

(7) Problem or policy oriented nature of the area: The problem-oriented nature of Population Education involves interdisciplinary work. The problem posed in the context of the prevailing subject-centered structure of curriculum has always been a difficult one. In addition to the need to be value-fair, the teacher also faces the problem of growing out of the teacher training in which the focus is on specialized training along disciplinary lines.

6.2.2. Organizing the knowledge base:

Various content components were identified during the national seminars held in India (NCERT, 1969, 1972; FPAI, 1969, 1972)

and the UNESCO regional workshop in Bangkok (1970). These seminars provided a forum for educators from different parts of the world to participate in this process. Delineation of the various population parameters was studied from diversified viewpoints and perspectives. The proceedings and collection of papers presented during these deliberations served as one mode of formalizing the knowledge base. Most of these documents reflect the elite values, not that of the whole society.

These initial programs were characterized by arbitrary selections of particular concepts and associated data from a variety of sources, including national and foreign documents and reports not originally prepared as a content base for Population Education and the assistance of scholars and specialists in various fields. It was assumed that the cumulative effect of such discrete elements will make an integrated whole. In other programs, curriculum developers have begun with a series of objectives with an assumed, but unformulated knowledge base, and have selected what seems to be appropriate content for those objectives, without being concerned with how the total content hangs together conceptually.

A need for an organized knowledge base in the form of a sourcebook was recognized during the initial seminars and workshops. This resulted in Population Education in Asia, A Source book, 1975, prepared by UNESCO regional office for education in

Asia, Bangkok, Thailand. The sourcebook presents one approach to the formulation of a knowledge base. It emphasizes the quality of life themes and provides curricular guidelines and specific population data for the Asian region.

Other formulations have taken the form of resource materials, handbooks and curriculum guides, prepared by Population Education unit at the national level as in the case of India, and the Philippines, such as NCERT publications in India and the PEP program in Philippines (these publications have been listed in the chapter on review of literature) or by individuals working the field (Sharma, 1974; Jacobson, 1977) and national and international organizations, such as the Population Council, New York, Population Reference Bureau, Washington; IPPF, FAO and the UNESCO.

In addition to these, universities in different countries such as the S.V. University in India, the University of North Carolina at Chapel Hill in the U.S. and several colleges and universities in the Philippines have compiled source material packages and readings for Population Education.

6.2.3. An Interdisciplinary analytical model for the organization of knowledge base for Population Education:

International study of the Conceptualization and Methodology for Population Education, in its questionnaire outline for the structuring of data, topics and issues in Population Education (ISCOMPE, Outline, UNESCO, 1975), presents one approach to the

organization of knowledge base:

The following areas are outlined:

1. The population situation
2. Relation between population situation and quality of life:
 - a. political relations
 - b. economic development
 - c. food and nutrition
 - d. income distribution
 - e. employment
 - f. urbanization
 - g. education and literacy
 - h. health
 - i. social services (housing, transportation, social security)
 - j. resources
 - k. environment
 - l. density (social and psychological well being)
 - m. status of women
 - n. child development
 - o. human rights
 - p. religion
3. Sexuality, including reproduction, social and psychological aspects, norms and mores; family planning including contraception and/or infertility
4. Action programs:
 - a. public policies and programs
 - b. individual, family and group choices

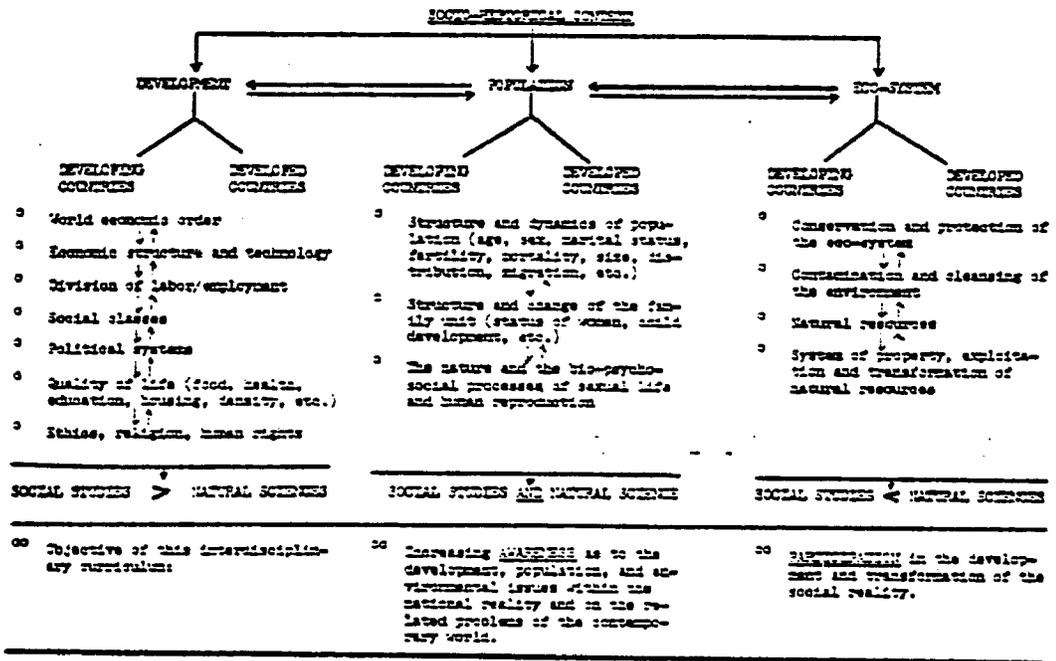
An interdisciplinary analytical model, Table 6.1, is suggested in this outline to overcome the fragmentation of knowledge, as it is in the traditional curriculum. It is assumed that Population Education as an interdisciplinary and trans-disciplinary area, through such a model can facilitate an unstructured understanding of the social and natural world, and contribute in bringing about an interdisciplinary approach in

TABLE 6.1

TABLE SHOWING A SUGGESTED INTERDISCIPLINARY ANALYTICAL MODEL

INTERDISCIPLINARY ANALYTICAL MODEL REPRESENTING THE BASIC PREMISE OF POPULATION EDUCATION; A METHODOLOGICAL INNOVATION

Population Education is devoted to the study of population matters interrelated with many other variables. A model is needed to overcome fragmentation of knowledge in traditional curriculum and the unstructured understanding of the social and natural world. A suggested model for bringing about interdisciplinary approach in education is provided in this table.
 Theme: Knowledge base of Population Education within the historical context of social change.



education. This interdisciplinary model visualizes knowledge base for Population Education within the socio-historical context of social change.

As is shown in the table, it would be possible within the historical context of social change to break down the knowledge of Population Education into three basic areas, dialectically interwoven in such a way that could lead to the reorganization of social studies and natural sciences at the secondary school level. The table is based on the following basic ideas

(ISCOMPE Outline, UNESCO, 1975, p. 20):

- (i) Man is as much a consumer as a producer of cultural and material goods.
- (ii) Man has established a dialectic interrelationship with his natural and social surroundings .
- (iii) All through history, he has created a series of social institutions in order to regulate and control his interchanges with nature and man. Therefore history is the history of man within society.
- (iv) the causes for current phenomena and their future consequences only become explicit when we understand the socio-historical and cultural origins.

This suggested interdisciplinary model emphasized the following aspects in its basic outline:

1. Subject matter is replaced by problem centered areas.

2. The three main areas of this knowledge-base organization must be studied in their socio-historical context.

3. As an hypothesis, it is supposed there are differences in the contents selected for the curriculum of a developing country and those of a developed country.

4. The elements in the population and ecosystem columns usually relate directly to the development column as this column includes the more general categories within which more concrete categories function.

5. Social studies have more to offer to the study of development than do natural sciences. This is reflected in the "development" column ($> <$). The opposite is true in the "eco-system" column. In relation to the "Population" column, it is supposed that there is a similar contribution coming from the social studies field and the natural sciences.

6. This table supposes that each problem should be studied in an interdisciplinary way, interweaving contents coming from the three columns of the Population Education knowledge base.

6.2.4. Concept of 'folk-demography' and the knowledge base:

Cultural factors, social values, traditional beliefs and attitudes of individuals in population matters form a very significant and relevant aspect of the Population Education base (Cousins, 1974; Ihromi, 1974; Jocano, 1974; Mehta, 1972; Wayland, 1972). The initial programs, however, focused mainly on the macro level issues as reflected in the 'determinant-consequences' model

developed by the UNESCO regional workshop in 1970. This was mainly due to the newness of an unidentified field and lack of data at the micro level.

Wayland (1972c, 1972e) developed the idea of 'folk-demography' relating to the knowledge and values people have in population matters that are acquired through their cultural traditions, folk-sayings, proverbs, classic stories, literature and songs. Students acquire this folk-demography as a result of the socialization process operating in the environment of home and community. Folk-demography will vary widely in different sub-cultural settings. The factual aspect of this student world view conception, in relation to the content which a teacher brings to the classroom, makes folk-demography a very important aspect of Population Education subject matter. As the definition of "population" becomes clearer, the relative importance of individually oriented concepts and data is being emphasized more and more.

Emphasizing the significance of cultural factors in Population Education, Hanumanulu (1974, p. 8) states:

The shades and meanings of Population Education would certainly vary due to values and socio-economic systems from place to place and region to region. In any country the meaning and scope of Population Education can hardly be divorced from the cultural values and national philosophies of the people concerned and the dimensions of Population Education would vary inside the same country.

With reference to India, he observes that India is still largely a conservative country. Religious sentiments have a

stronghold, more due to ignorance and illiteracy than fanaticism. The level of thinking is different from region to region and village to village. A student not only carries to the school the thinking of the home and the family, but also finds contradictions in the new thinking in the school. The student needs proper reconciliation of these opposing ways of thought.

Jocano (1974, p.1) with relation to cultural imperatives in Population Education, a case study from the Philippines concludes that the acceptance or rejection of new ideas and practices related to Population Education is largely influenced by (i) beliefs people have about the intentions of the innovations, (ii) anticipation concerning future events, and (iii) appraisals of the consequences of alternative courses of action. No society is ever static. Changes however insignificant are occurring every day. The problem is how to accelerate these changes, in what direction and for what goals.

He goes to emphasize that in traditional peasant societies the approach to innovation must take into consideration the significance of local norms and values related to human behavior. Through his involvement with field research in Population Education and family planning he makes the following observation for traditional societies.

...innovation is not a matter of presenting new ideas to the clients. In fact, it is less of a scientific venture ...rather it is a humanistic affair...New ideas must incorporate some of the old and traditional ones in order to provide a continuity to the educational process in

change and to make the experience in innovation one of exploration and discovery, not difficulty and frustrations.

Consideration of cultural heterogeneity is very significant in Population Education in countries such as India with a complex system of subcultures (Viederman and Wayland—personal interview, 1975). Cousins (1974, p. 1) emphasizes this point thus:

We assume that a culture is a shared system of behaviors and beliefs in which all aspects are interrelated and which enables human groups to adapt to a variety of environmental conditions.

While national Population Education programs tend to approach people as an undifferentiated mass, all of the countries involved in the study are characterized by cultural heterogeneity—tribal, religious, racial, ethnic, national, caste and class—often as a result of an arbitrary definition of boundaries by the colonial power.

Reflecting upon the dangers of isolating educational systems from the broader context of the society and their perceived roles in the process of socialization, Johnstone (1974) points to the limitations of Population Education in population socialization. He notes that the history of formal educational systems is by and large a history of the elites, with lack of concern for mass socialization. The concept of mass schooling is a relatively new idea. In the western world it is an innovation which is less than two hundred years old. A vast range of socialization functions have been asked of formal education—culturally and vocationally, also taking the individual needs into consideration. There are many competing areas demanding a place in the curriculum. It is important to keep in mind what formal education can do and what it cannot.

He observes that children very early acquire population related concepts. Recognition of folk-demography is very significant to population socialization. There should be awareness of the "hidden curriculum" that operates in most schooling systems through textbooks reinforcing the traditional norms. The notion of the validity of old subject centered disciplines on the part of teachers, lack of agreement among educators, the class status and sex of the teachers influence the perception of school as a socializing agency in population. School and society are usually viewed as mutually exclusive. Obvious linkages that might be formed have been overlooked, so is the future oriented nature of schooling. School systems reflect social change. There are very few examples when it has been a potent agent of change. It is essential to define what schools can and what they cannot do. In the traditional societies, in population matters school is seeking to socialize outside the context of the society. There is a lack of research base. If schools are to play a more active population socialization role and if this is to be relevant to subsequent effort in the field, then educators need to know more than they currently do about pupil, product and process. Active research in these areas is proposed by Johnstone.

6.3. Population studies as knowledge base—a new synthesis:

The concept of population studies as the content base for Population Education was introduced in the Chapter 4. The term

refers to all those areas where the element of population is a factor. In a narrow perspective this term is used by demographers in their population related studies. In the context of Population Education, population studies assumes a very broad perspective. It represents a synthesis of concepts and data from those fields which contribute to the study of the relationship of population factors to the individual and social development. If population studies is thought of as potentially relevant knowledge concerning population, then population studies may be thought of as an encyclopedia which the educators might turn to for curriculum development. Framework for what is to be included in this will be determined by a variety of factors which will serve as filters in selecting educationally relevant content from the total body of knowledge that is available (Pop. Edn., A Sourcebook, UNESCO, 1975).

Population studies, like history and social studies will reflect the experience and circumstances of each country with due consideration to comparative analysis. There may be large number of different selections from the subject field of population studies each suited to the interests and needs of a particular group. Within the field of Population Education, the needs for special groups may also be different. For instance, the needs of those working with out-of-school youth may be much narrower in scope than those engaged in teacher education.

6.3.1. A process for structuring population studies for Population Education:

A process for the formulation of population studies for Population Education has been developed by the ISCOMPE (UNESCO, 1976, draft copy and 1978), incorporating the various factors which act as filters in the selection of educationally relevant information, concepts and theories as data for population studies for Population Education. A brief review of this selection process is presented in the following section describing a number of filters which influence the orientations and approaches used in selecting knowledge from population studies from which curriculum developers will be able to draw the content of specific programs of population Education.

1. The selection process: various filters (factors):

The choice of a framework for population studies will result from the interplay of four factors in selecting the relevant knowledge and also as a basis for integrating and structuring that knowledge. The purpose is to focus (not to eliminate) from the broad spectrum of population related knowledge.

- (i) Population perceptions and population policies as the main filter: The nature of population issues as perceived by the government, the public and as expressed in public policies will be the main focus around which concepts and data will be organized. For

example, rapid growth of population causing overpopulation is the center of emphasis for the Asian region. In Africa, it is rapid urbanization, in Romania, it is declining growth rates. In the U.S. it is the complex of environmental issues, urbanization, life styles and consumption patterns.

Population perception should not be a limiting factor. One goal of Population Education is to broaden the perception of population issues. Additional dimensions beyond those which are country's primary preoccupation would be included, thus expanding the horizons of public awareness and debate. The framework will also be affected by other perception factors, including social and economic development; cultural, political and ideological factors; and various population and development policies.

- (ii) The Institutional filter: The role of the educational system in relation to the contemporary social issues in general and population issues in particular will act as another filter. The role of the formal as well as non-formal educational settings is of great relevance to population studies. In some countries, the component of the out-of-school program is given major emphasis as compared

to in-school. The role of education in transmitting knowledge and as an agent of social change has a significant bearing on the formulation of population studies for Population Education.

(iii) The Approach filter: Conception and organization of Population Education within the educational system:

Conceived in terms of a new discipline, as it might be at the university level, the approach to the body of knowledge will tend to be disciplinary. If a problem approach is adopted, the definition of the problem would serve as the focus of attention and the approach will tend to be interdisciplinary. These two approaches call for a different selection of content and a different mode of organization. The conceptual framework of the body of knowledge will also be affected by the way in which population activities are related to other educational programs, such as environmental education, sex education, continuing education, programs in various other disciplines, or out-of-school community programs.

(iv) The Knowledge filter: The state of the knowledge about population issues and the adequacy of the population data: What is known in the area, how

relevant and useful is the information of one country to another; dynamics of the situation at the micro level, interaction between micro and macro level processes—are some of the important factors in evaluating the adequacy of the population related knowledge which is available.

2. The Translation process: The Value 'filter': Existing knowledge is in the hands of specialists in a particular substantive area. The process involves translation of what is known from the scholar's lexicon to the student's lexicon. Selection as to what is potentially relevant involves value judgement. A dialogue between the experts—the producers and custodians of knowledge—and educators and learners is essential for this process. The curriculum developer is usually middle class urban, while learners represent a much wider range of class and interests. A clear assessment of learner needs is essential. Another area of caution is the evolving and developing state of knowledge itself. Educators will have to keep abreast of these developments.

6.3.2. Alternative frameworks of population studies for population education:

Population Education programs being developed in the several countries around the world reflect a variety of orientations to population studies. Based on the study of these programs, ISCOMPE

(UNESCO, 1978) has derived alternative frameworks of population studies for Population Education. In practice, these frameworks overlap and draw from each other. The particular framework chosen will determine in large measure the selection of the body of knowledge for population studies as a base for Population Education. A further selection will be done to meet the objectives in different settings for different audiences.

1. A Population and Family welfare framework: The primary focus in this framework is on the individual and the family and is based on the following assumptions:

- (a) Population dynamics is the sum total of multitudes of individual decisions throughout the life cycle, and
- (b) with an attention at the micro level problems at the national level will take care of themselves.
- (c) Pedagogically, it is assumed that population learning, as any learning, must begin close to the individual's own experience, broadening to other dimensions.

Attention in this framework is directed to the interrelationship of the individual and the community, to human sexuality in terms of education and employment, to aspects of home economics and folk-demography. It also includes the broader issues as they relate to the individual's dealing with the economic, socio-cultural and psychological assessment of costs and

benefits of children, at the community and national levels.

Social and community norms are included to develop an understanding of the varieties of pressures that influence the behavior relating to marriage, birth and even choice of residence.

Such frameworks are being developed by various organizations, such as International Associations of Schools of Social work, and American Home Economics Association in their source materials to incorporate Population Education content in their programs in the U.S. and overseas programs for developing countries.

2. A Population and Socio-economic development framework:

This approach is based on the assumption that the educational systems must assist in the definition and attainment of national developmental goals. For instance, Latin America prefers the approach to align the development of Population Education, with the concept of 'development education'--covering three distinct bodies of contents relating to the problems, processes and the means of development. Learners are to be made aware of these concerns concurrent with their education in population concerns.

The difficulty with this approach is the lack of consensus on the concept of development and the ways population dynamics affects and is affected by development. Besides, developmental education includes issues mostly at the macro level reflecting upon how the policies affect the individuals, but not vice versa. This fact justifies a separation of Population Education and

Developmental education. Though the framework is not very well developed, the growing body of literature could be of use to the curriculum developers and teacher educators.

3. A Determinant-Consequences of population behavior

framework: This framework is developed on the assumption that all population behavior has its determinants or causes, resulting in certain consequences or effects. Causes, the population situation and the effects form the three basic cognitive aspects of population studies in this framework.

The learners are able to focus on the two basic ways in which their and their society's behavior can be modified—

(i) by altering the elements which are presently causing the behavior, or

(ii) by understanding the possible future effects of different behaviors and then selecting behaviors so as to promote preferred futures.

An example of this approach is reflected in the African social studies program sourcebook.

4. A Population and Quality of life framework: The primary focus in this orientation is upon the consequences of population developments for the quality of life of the people in the area of food, education, health, environment and socio-economic development. It is partly based on the pedagogical assumption that learning is enhanced once the individual sees

the relevance and is motivated to obtain a better understanding of the factors which affect the quality of life, in an effort to modify his or her environment to the extent possible to have a better quality of life.

An individual in this conception is seen as a 'population actor' in the family and community. A wide range of population phenomena are examined within the particular cultural context, rather than confining to fertility and rapid rates of population growth.

This approach characterizes much of the program activity in the formal education in Asia. Population Education, a Source-book for Asia, UNESCO, 1975, is developed within this framework.

5. A Population, Sexuality and Responsible parenthood framework: This frame emphasizes relationship of human reproduction and life cycle events. It is based on the assumption that aspects of human reproduction and sexuality are related to individual fertility, to the events of birth and marriage and thus are relevant content in any consideration of population issues, but are not sufficient to facilitate decision-making regarding fertility behavior, which takes into account not only individual but also social consequences of actions. The extent to which such contents are included will depend on cultural, political and the traditions by which sexual information is passed from generation to generation. This framework focuses on the individual, while Population Education deals not only

with the individual, but the interrelationship between the individual and the society. There is a large body of knowledge from the area of human sexuality, both in its biological and medical context and in terms of culture. The important task is the identification of such a knowledge as related to population studies.

6. A Population Eco-system and Environment-resource framework: This framework, most common in the biological sciences is centered around the relationship of human population with the ecosystem. Content ranges from the immediate impact of population developments on resource use, environment and threats to the biological support systems to questions concerning the actual survival of human populations at the global level. Within these, varying degrees of attention is given to human institutions, values and the quality of life. This conceptualization is mostly found in industrial countries.

A variety of issues of importance to Population Education, such as the role and status of women, cannot possibly be accommodated in this view. The potential effectiveness of individual decision-making in the two fields may be quite different. For instance, individual environmental action is not as directly controlling of the quality of one's life, as in the case of individual population action. For instance, a decision to have less children may have an effect on individual's life, while his decision to drive a small car, unless 'neighbors'

respond will not affect the quality of life.

Examples of this approach are UNESCO Biology Sourcebook, and Environment and Population, a U.S. publication. It should be recognized that population is an essential component of environmental education, and environment is an important fact in the theme of Population Education when considering quality of life issues.

7. A Population and Alternative futures framework: In this framework the major thrust is on 'futures education', to make futures a matter of serious study and consideration in order to highlight for the learners the fact that their actions now have future implications for themselves and future generations. This approach has methodological problems. Dealing with the future requires making clear at the outset the value assumptions that form the base of any projection in the alternative forms of social, economic and political organization, and their likely consequences on the course of human events. System analysts and policy scientists use a wide range of sophisticated techniques, such as the Delphi method, simulation, exercises and gamings for such projections. The educational effort makes use of the literature of science fiction in imagining the course of alternative futures.

8. A Population-Values-Human rights framework: The frameworks which are described earlier will inevitably be influenced by individual or society value systems, some of which will

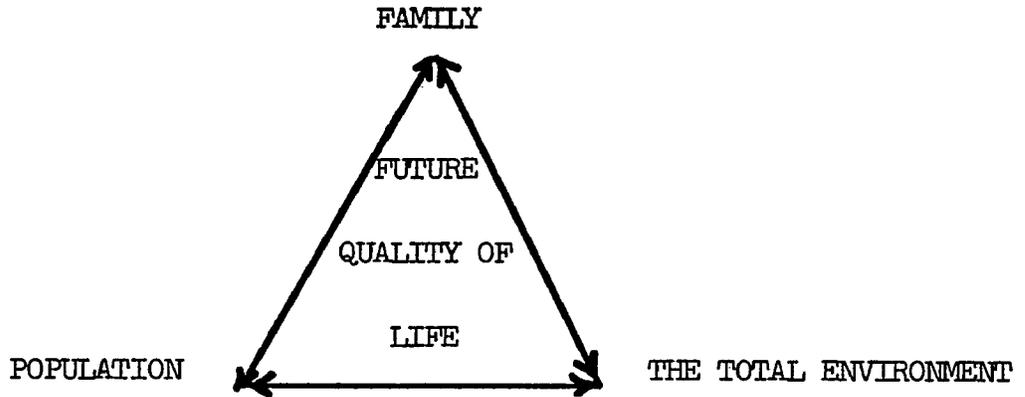
directly or indirectly find their way into the curriculum with consequent impact on learners to lesser or greater extent. Educational programs have recently been devised to examine and clarify value-systems referred to as "Values Education" which generally possess a sociological, socio-psychological basis and a content which seeks to analyze existing value systems in societies in order to present alternatives to learners to examine. The purpose is not to teach specific values but rather to teach about values and value-systems. This framework has theoretical implications for Population Education related to folk demography in population related matters. The process of informed and conscious decision-making is, in many ways a value judgement process. There is a scope for incorporation of Population Education in this framework.

The focus on human rights has been suggested by ISCOMPE (UNESCO, 1978) as an organizing concept for a values approach to Population Education in view of the priority given to the concept of human rights in various United Nations Proclamations and Declarations over the past thirty years with direct or indirect bearing upon population related issues. These include the basic human rights such as rights of parents to determine the number and spacing of children, or migration, or rights to health, education, privacy, sexual equality and so on. Population-human rights interrelationships might also be components in other frameworks, such as in a socio-economic framework with rights related to social justice and the like.

Major components of the different frameworks of population study for Population Education were examined in the preceding section to identify the overlapping and sharing of the concepts and data in these areas. The foci and emphasis in each is different deriving from different goals and objectives. Population studies, thus, was conceived within different perspectives as the knowledge base for Population Education. The next task for the curriculum developer is to develop instructional materials from this knowledge base. The process of transformation is accomplished through several sequential steps as has been conceptualized in the UNESCO Sourcebook (1973--trial edition, 1975), and ISCOMPE (UNESCO, 1978).

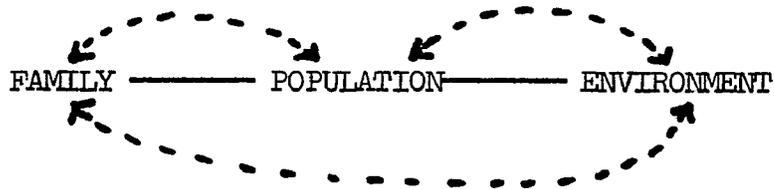
6.3.3. Basic underlying orientations in the frameworks:

It can be generalized from the various alternative frameworks described in the preceding section, that population phenomenon encompasses three significant dimensions--family, population and the total environment. This could be represented as shown in the following representations conceptualized by the researcher. These include the micro-level perspectives, the environmental perspective, and the demographic perspective.

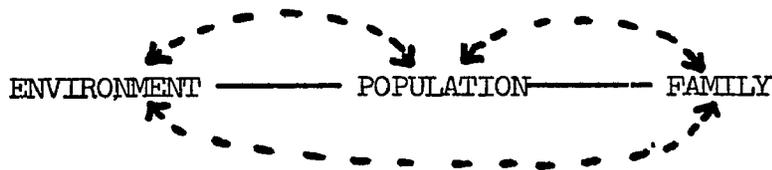


The diagram shows the reciprocal relationship between the three dimensions. The orientation of content drawn from each of these as represented in the different frameworks can be viewed in the following perspectives:

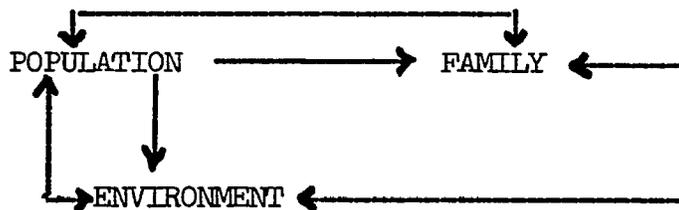
1. Micro level perspective



2. Environmental perspective



3. Demographic perspective



The visual representation was developed by the researcher to identify the basic variation in the orientation of contents in the different frameworks described under 6.3.2.

6.4. The process of transformation from the knowledge base to instructional materials:

Two approaches based on similar pattern have been developed at the conceptual level.

6.4.1. The UNESCO model:

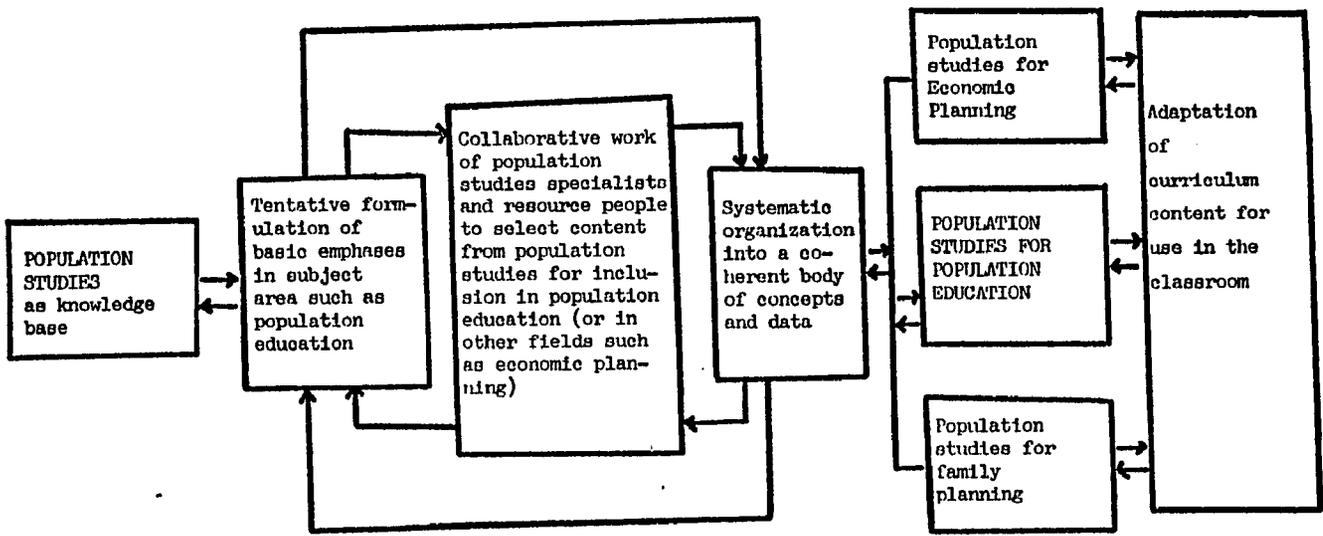
This model developed by the UNESCO Sourcebook (1975) involves the following four steps in the process of transformation:

- (i) Identification of a general knowledge base that might be called population studies,
- (ii) selection of material from population studies and its development into a professional content for educators,
- (iii) selection and organization of the concepts and data suitable for the particular curriculum,
- (iv) adaptation of this core curriculum for the classroom with suitable methodological and pedagogical changes.

This formulation as represented diagrammatically in figure 6.1 traces the relationship of population studies content with different subject areas involving the above four stages.

An elaborate scheme of the above formulation was drawn during the preparation of the UNESCO Sourcebook (1973, trial

- 1. Identification of knowledge base
- 2. Selection and development
- 3. Organization of concepts and data
- 4. Classroom instruction



DEVELOPMENT OF POPULATION STUDIES CONTENT FOR DIFFERENT SUBJECT AREAS

Fig. 6.1

edition) which gives a clearer view on the various stages involved in the knowledge base transformation to instructional materials. These stages beginning from the population perceptions to special educational programs in population matters, are described to provide the population educator with the total perspective on the processes involved in curriculum planning in Population Education (Flow Chart, Fig. 6.2).

- (i) Perception of population issues, such as growth, size, urbanization and environment.
- (ii) Public response to these issues in the form of public debate, action programs in public and private sectors and education programs.
- (iii) Research and conceptualization of problems by scholars; the contributions of several disciplines in research, such as, demography, social sciences, natural sciences, humanities, interdisciplinary and others in the formulation of population studies.
- (iv) The potential content for various information and education purposes, including the academic specialties, the professional fields, the general public programs and schools and higher education.
- (v) Factors influencing selection of appropriate content of the educational programs--national objectives, national education objectives, nature of systems through which education is provided, nature of the learner, and the

Flow Chart Showing Stages from Problem Recognition to Specific Education Programs

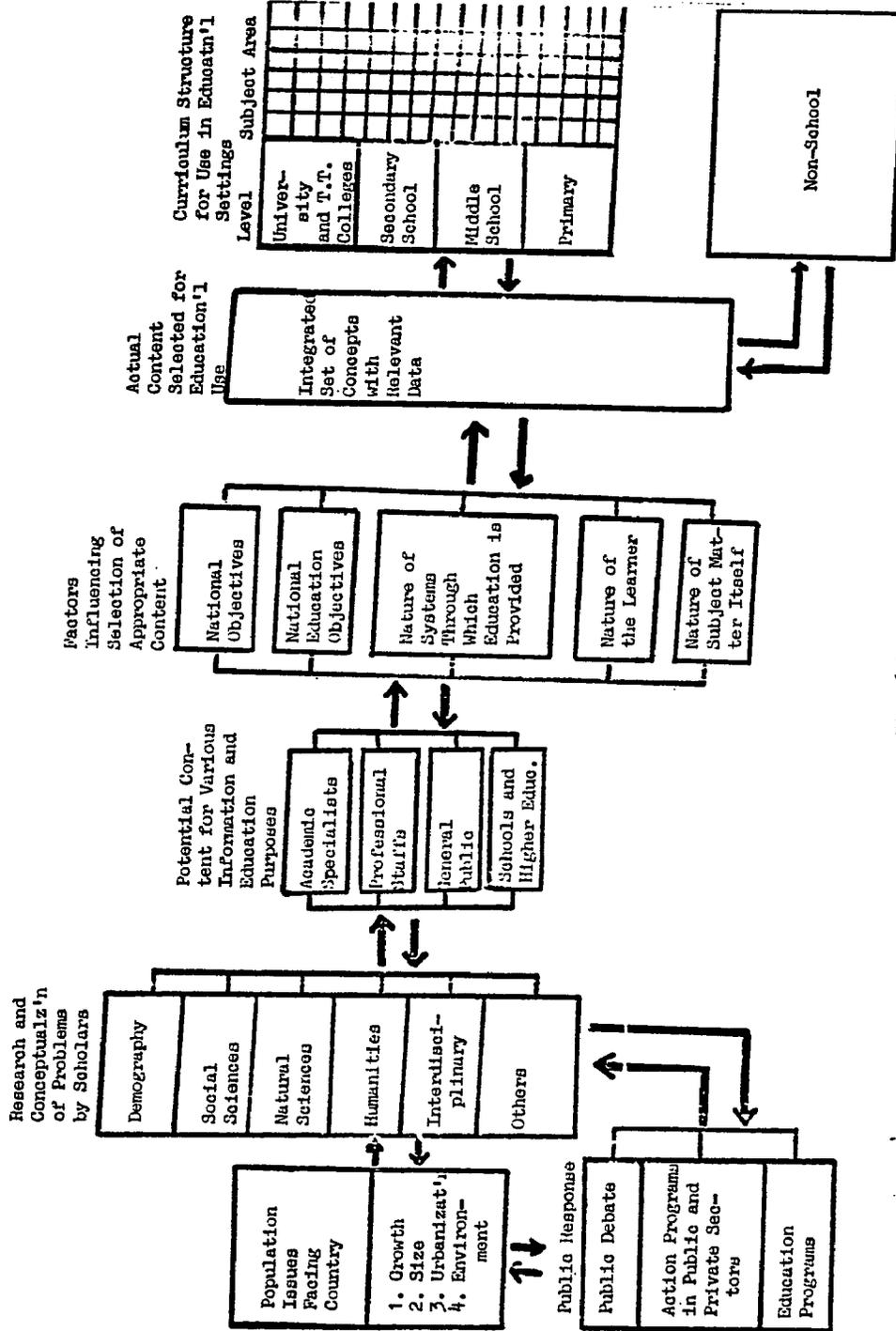


Fig. 6.2

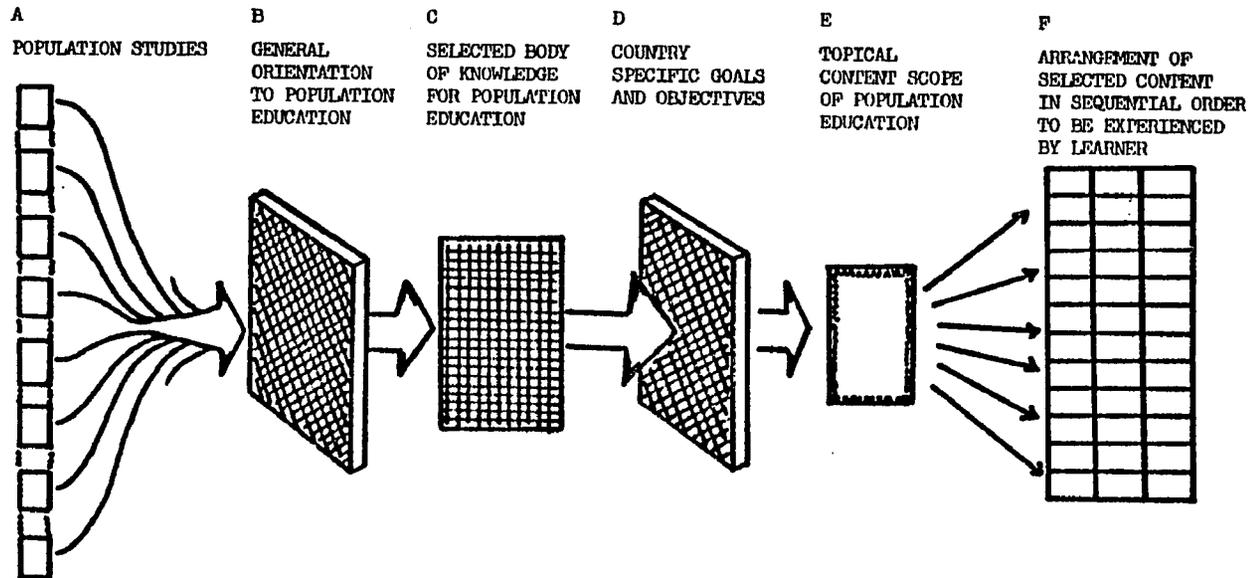
nature of the subject matter itself.

- (vi) The next stage represents the actual content selected for educational use, the integrated set of concepts with the relevant data.
- (vii) From this integrated body of content, curriculum structure for use in different educational settings is drawn for different levels, such as primary, secondary, university and teacher training within the various subject areas, and for non-formal educational process.

6.4.2. The ISCOMPE Model:

A simplified variation to the transformation process is represented as population studies being sifted through several filters before being formulated into a curriculum as shown in the diagrammatic representation developed by ISCOMPE (UNESCO, 1976 draft copy), as shown in Fig. 6.3. It involves the following stages:

1. Population studies--an interrelated but unintegrated body of knowledge.
2. General orientation to Population Education provides the initial criteria for identifying the relevant, but selected body of knowledge to be used for choosing the program content.



A Diagrammatic Representation of the Transformation Process
from Population Studies to Learning Experiences

Fig. 6.3

3. The selected body of knowledge is visualized as a single unit, with the assumption that the selected aspect will be formulated into an integrated system.

4. The goals and objectives of a program act as next set of filters providing criteria for identifying specific country relevant data and concepts to be abstracted from the selected body of knowledge in 3.

5. These data and concepts are finally arranged in a sequential order to formulate learning experiences for the student.

The formulations presented above provide a framework within which a teacher would formulate the content in relation to his or her own subject area. It also provides a basis for the teacher to see the place of his or her own work in relation to the instruction that would be provided by other teachers. These conceptualizations are developed in view of the subject oriented nature of the curriculum.

6.5. Summary:

The chapter was devoted to the knowledge base issues in Population Education. An appraisal of the special features of the innovation provided a handle on the identification and formulation of the knowledge base. The concept of population studies was developed through the analyses and the role of various factors operating in

the process of its organization. The main foci and content orientations in the various Population Education programs being developed in several countries were identified to analyze the alternative approaches to structure and organize population studies for Population Education. The processes in the transformation of the knowledge base into instructional material and methods as conceptualized in the UNESCO and ISCOMPE model, provided the total perspective leading from population studies to Population Education curriculum. The next chapter deals with the theory and practice of Population Education and the mechanics of curriculum development in a systems perspective.

CHAPTER 7: CURRICULUM DEVELOPMENT IN POPULATION EDUCATION

SECTION I

THE THEORY AND PRACTICE OF POPULATION EDUCATION

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7.1.2. The UNESCO Project

7.1.3. The Delaware Project

7.2. Theoretical considerations

7.2.1. A theory of population education

7.2.2. A conceptual model for population education curriculum

7.2.3. A structure for population education

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7.3.1. A methodology for 'future-decision-making'

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7.3.3. The transfer theory

7.3.4. A case for the problem-solving method

7.3.5. Values, ethics and population education

7.3.6. A range of general methodologies

7.4. Summary

CHAPTER 7

CURRICULUM DEVELOPMENT IN POPULATION EDUCATION

Curriculum development in Population Education has proceeded at two levels—i) the action programs, which include the national Population Education programs in developing countries, such as in India and the Philippines, where operational and practical guidelines are being adopted in view of the urgency of the population situation; and the local programs and projects, such as the Baltimore program, with an urban focus, and the K-12 Delaware population-environment curriculum project in the U.S.; ii) another plane at which guidelines for curriculum development are being worked out is the theoretical conceptual level for the purpose of developing a philosophy and theory of Population Education.

In Chapter 7, the curriculum strategies and points of views inherent in the above two dimensions are analyzed to identify the major guidelines for curriculum development in Population Education.

For organizational purposes Chapter 7 is divided into two sections. Section I deals with the theory and practice of Population Education and Section II, with the mechanics of curriculum development and its implementation.

SECTION I

THE THEORY AND PRACTICE OF POPULATION EDUCATION

7.1. Action programs:

Three programs were analyzed: i) Population Education Project (PEP) of the Philippines; ii) the UNESCO regional workshop project (1971) and iii) the Delaware project in the U.S.

7.1.1. Population Education Project (PEP), the Philippines program:

PEP represents an operational model for a national 'dynamic curriculum development program.' In the words of Donald Chauls (1973, p.94), who was the consultant advisor for the program, the curriculum was developed 'massively and haphazardly—to save time, but not at the cost of precision and careful analysis.'

It was built on the following plan:

- (i) Development of a large-scale, multi-unit curriculum preparation during the first year of the program. It did not begin with a systematic analysis of the target audience. The primary goal was to get a complete set of materials prepared as rapidly as possible.
- (ii) The initial decisions taken included the integration of the curriculum into five existing subjects: social studies, health, science, mathematics, and home economics; to develop materials for all grade levels

with equal emphasis at all levels; to include sex education only insofar as it helped in understanding of population dynamics and some population problems; to emphasize an inquiry or discovery approach as much as possible; the approach of 'sub-units' was evolved to disturb the existing syllabi as little as possible. These sub-units are of three days to two weeks duration, closely linked with the existing materials, and are to be inserted during or after teaching the regular unit. The purpose was to develop a module complete in itself, yet clearly related to the main unit to which it was added.

- (iii) These sub-units included an overview of objectives, content, teaching/learning activities plus the relationship of the sub-unit with the main unit, and the relationships to the other population sub-units in other subjects and grades.

The operational approach to develop the curricula was based on the following procedure:

- a. Define goals, purposes, major topics.
- b. Prepare a single general content list for all subjects/ grades which is an expansion of the major topic list.
- c. Divide general content list by subjects.
- d. Develop each subject's content list in greater detail.

- e. Divide each subject's detailed content list by grade.
- f. Prepare sub-units for each subject and grade.
- g. Prepare background readings for teachers.
- h. Obtain feedback from selected students, teachers, supervisors and other experts.
- i. Revise sub-units and background units.
- j. Field test with those units not completed during the year.
- k. Revise.
- l. Train supervisors and teachers for pilot study of all sub-units.
- m. Conduct a pilot study of all sub-units for one school year, simultaneously disseminating all the sub-units to all teachers who undergo training.
- n. Conduct a study to determine student characteristics.
- o. Revise, disseminate, obtain new population data, adapt foreign population education curriculum materials, evaluate the use of some of the sub-units; conduct a series of basic research studies; reconsider basic decisions; revise.

A 'shot gun' approach to develop forty-two units in six months was adopted on the assumption that by developing a

large number of units, at least some of them were likely to lead to the achievement of the long term objectives. The obvious advantage of the program was speed, to provide Population Education in some form to more people in shorter time. It was planned to be a continually evolving process, which does not inhibit change.

The methodology proposed was inquiry/discovery, not lecture, and preparation of visual aids. The content emphasis was on a 'determinant consequences' framework with demographic bias, with the provision of the curriculum to pass over time from a demographic to a sociological and psychological orientation. A sound base in demography was considered essential for a comprehensive understanding of the population situation. It was hoped that the curriculum staff through self-study can gradually handle more sophisticated sociological and psychological aspects. Another reason to choose a demographic base was that much of sociological and psychological content is just not available. Hence, in the PEP program, curriculum development was planned to be a dynamic process rather than a static product, with curriculum improvement inbuilt in the process-- from demographic oriented to more sociological and psychological orientation; from lecture-verbal content oriented teaching, towards inquiry and pupil involvement through modifications of units development of visual aids, programmed instructional materials and other pupil materials.

Chauls (1973) compares this approach with the 'slow and systematic' approach (Brown, 1972) to highlight the differences (Table 7.1). The tentative content outline of the PEP is provided in Appendix A at the end of the present study.

7.1.2. The UNESCO project: Population and Education: Asian Regional Workshop (UNESCO, 1970): The Curriculum Development project at the regional level was analyzed to study the strategies adopted for the Asian programs in the absence of a model.

The workshop was divided into four operational phases. Phase I included a review of possible content that may become content ingredients into Population Education, including aspects of demography, economics, sociology and biology; Phase II included, i) establishing general and specific objectives and extraction of potential topics from the general objectives, ii) selection of preferred content areas to be worked on in terms of social sciences/natural sciences breakdown, iii) content analysis translated into instructional materials, teaching procedures and teacher/pupil activities, including evaluation. Phase III and IV were devoted to the preparation of guidebooks which included Section I on natural sciences and Section II on social sciences.

An operational approach to curriculum development was adopted. It was assumed that Population Education consists essentially of the addition of certain new topics in an existing school program. Content was viewed in terms of topics, and

A Comparison of the Slow/Systematic Approach and
the PEP Approach to Curriculum Development

Factor	Slow/Systematic	PEP
Summary description of first year project	Begin with needs analysis study; develop one or a small number of units; revise several times; pilot test; revise again	Needs analysis a guess only; develop many units in short period of time; revise slightly
Relationship of the units' knowledge/attitude objectives to ultimate behavioral objectives	Assumed to be direct	Assumed to be unknown
Quality of each unit (=likelihood of achievement of knowledge/attitude objectives)	High	Moderate
Speed in which an entire program can be disseminated	Slow	Rapid
Staff requirement	Staff must already be good curriculum writers and evaluators	Staff must be reasonably competent, but peak quality not needed until later years of the project
Relationship to program change in future years	Inhibits change	Encourages change

Table 7.1

objectives in terms of understandings. The value of each topic, in the absence of any empirical evidence, was decided by indirect evidence—opinion of educators, who knew their cultures, choosing mostly the non-controversial topics to begin with.

The characteristics desirable in the instructional materials were spelled out as follows: the content should be related to objectives and should be supported by up-to-date and accurate data whenever possible; it should be suited to pupil's maturity level, their needs and needs of the country; the instructional materials should help to develop skills such as collecting and recording data, distinguishing between data and interpretation of data, verbalizing ideas, recognizing underlying assumptions, making explanatory guesses (hypothesize), recognizing, where necessary, gaps in the existing knowledge; they should help to develop attitudes which are considered to be valuable. In addition, the materials should include teacher guides, discussion techniques, procedures for practical work and evaluation procedures.

A variety of instructional materials emerged—play writing, topic listing, teaching activities, several modes of inclusion such as single course, units in a single subject area, permeation, or entirely through the efforts of a good teacher. It was assumed that Population Education content will be integrated with the content of existing curricular disciplines, which were

identified in terms of broad discipline groupings, such as social sciences and natural sciences.

Two curricular guides were published as a result of this project—Book I on Natural Sciences and Book II on Social Studies. These guides have been extensively used for developing Population Education programs in several Asian countries.

7.1.3. The Delaware Project: A conceptual scheme for population-environment studies:

A Population Education curriculum study project was undertaken by the University of Delaware in the U.S. which resulted in 'a Conceptual Scheme for Population-Environment Studies' (1973, p. 7).

The curriculum was based on the philosophy that—

The attainment of the knowledge and understanding necessary for the adjustment of the human population to the complex natural system of the earth requires a K-12, multidisciplinary program of population-environment studies with a problem-solving approach. These studies should be infused into existing school programs and should become a school-wide responsibility.

A comprehensive conceptual scheme was developed by the Population Curriculum Study on the basis of the theme—

Man is part of a natural system, the earth, and is ultimately subject to the limits of the system.

The study further specified that 'this conceptual scheme is a framework in which existing courses of study can continue to be used and in which new materials can be adopted. The scheme, whether adopted in whole or in part, can serve as an inventory of concepts and teaching materials and as a pattern in which

faculty interrelationships can be identified (p. 7). Six major concepts were developed in two parts, first a general development and then a more detailed expansion, to facilitate the assignment of responsibility for concept attainment among the teachers of a K-12 system.

It was suggested that teachers of a school district read through the scheme, identifying sub-concepts for which they are normally responsible. A coordinator was in charge of identifying and assigning the gaps in the responsibility. Lesson plans were prepared for several concepts.

This conceptual scheme checked against the existing course materials, serves as an inventory of available materials which can be from several sources on population related materials. Miscellaneous materials that would otherwise be lost or only partially utilized can be listed for quick retrieval, with the conceptual scheme serving as a cataloging system. Such a system will indicate not only the material already available but also the areas where additional materials are needed, thus serving as a guide for curriculum workers.

The objectives of Population Education are to be achieved through shifting emphases or examples in existing courses without increasing the workload of teachers. Any program of studies can be adapted to the conceptual scheme, without any disruption or new courses or any major teacher reorientation. Any teacher can check through the scheme selecting materials of

interest, can see at a glance the relationship between his work and that of other teachers and can note possibilities of cooperation and/or elimination of duplication. The scheme is to serve as a guide for schoolwide effort. However, it could also serve as a syllabus for a discrete course in population-environment studies or a system from which to select materials for mini-courses.

7.2. Theoretical considerations:

7.2.1. A theory of Population Education:

The two most prevalent views with regard to curriculum development are i) the "discipline-centered" view which assumes that knowledge which the discipline provides is the most useful and results in a rational person who uses systematically the conceptual apparatus of the discipline to meet the challenges of the environment; ii) the other is the "social-problem" view, when the curriculum is developed on the premise that population is a social problem to be studied and resolved. Massialas (1975) examined the 'person-centered' view which is not so prevalent and provides a framework which can incorporate all the three views.

a. Person-centered approach: This approach has not gained much support among population educators. It assumes that learning is meaningful only when it appeals to the individual's special interests, problems or concerns and draws from the disciplines, or, from the current report on social problems, to

the extent that they appeal and have immediate relevance to the learner. Introducing a demographic concept without first establishing its applicability to the individual would not be acceptable practice with this orientation.

According to Massialas, in a total educational framework, within the privacy of the individual, it is not difficult to accept the contributions that the various disciplines make or the action programs that emerge as political solution to societal or world problems. A well thought-out theory of learning and instruction in Population Education can accommodate all the three positions.

This view is based on the assumptions that knowledge has substantive and behavioral dimensions, that instructional objectives within a broad field of knowledge and practical experience issue from the interaction of substantive and behavioral dimensions. By "substantive" is meant those 'concepts', 'topics', or 'issues', that derive from the organized fields of knowledge (e.g., demography, biology, psychology), or from practical knowledge or experiences, for instance personal encounters and 'folk-demography.' 'Behavioral' refers to all procedures which may be employed by the learners in their quest to become functional members of the society, including cognitive skills, participatory skills and experiences, attitudes, and ethical norms and values.

b. A conceptual scheme for curriculum development: To provide conceptual clarity and draw specific instructional

objectives, Massialas proposes the use of a 'table of specifications' (Table 7.2) for the instructor to understand better the ideas constituting a field of study. This approach incorporates the three main sources of curriculum development—the individual, the society and the organized disciplines. The individual is included in that the so called 'substantive dimension' includes real life experiences on population specific or population relevant events. The individual also forms the basis of the behaviors listed in the horizontal dimension of the table. No particular category is prescribed, all of them being offered as options for learning. Flexibility and individualization is encouraged.

The society (or the world) is included both in the substantive and behavioral aspect (category 4). Participatory skills are developed in groups in such settings as schools, peer groups, civic and community groups or within the context of the family. The disciplines are included in the substantive domain, as well as in the development of cognitive skills that focus on discipline based concept or idea. The decision of what to include should rest on individual teachers and their students, who in their general framework can pursue creatively the topics they consider to be relevant. According to Massialas Population Education cannot find a place in the curriculum purely as an academic subject.

Table 7.2

Table of Specifications: Population Education

Behavioral	Cognitive Skills										Participatory Skills					Attitudes					Ethical Norms							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z		
(Substantive and Procedural) (Content, Method, Experience)	Demonstrating Conceptual Understanding	Identifying a Problem	Stating a Problem	Forming a Hypotheses or a Position	Exploring Consequences	Collecting Relevant Data	Analyzing Data	Testing Out Ideas or Positions	Making a Generalization	Applying a Generalization	Observing	Role Playing	Cost/Benefit Analysis	Organizing Group Activities	Influencing Decisions	Negotiating/Bargaining	Implementing Decisions	Showing Empathy	Interest	Efficacy	Trust	Social Integration	Tolerance	Internalizing	Objectivity	Value Consistency	Equality	Fairness
1.0 Concept of Population and Population Change																												
1.1 Fertility																												
1.2 Mortality																												
1.3 Residential Mobility																												
2.0 Determinants of Population Change																												
2.1 Factors affecting fertility (e.g., educational, bio-medical, family planning, etc.)																												
2.2 Mortality																												
2.3 Residential Mobility																												
3.0 Population Structure																												
3.1 Population Composition (e.g., age, sex, ethnicity, etc.)																												
3.2 Population distribution																												
4.0 Consequences of Population Change																												
4.1 Population changes and the individual																												
4.2 Population changes and the family																												
4.3 Population changes and education																												
4.4 Population changes and the economy																												
4.5 Population changes and the natural environment																												
4.6 Population changes and political development (e.g., public policy, electoral behavior).																												

c. Instructional method: Traditional modes of learning and instruction were based on certain psychological theories of learning, many of which issued in such outcomes as rote memorization of facts or events, unquestionable acceptance of adult norms of behavior, and a passive attitude with regard to one's ability to influence decisions in one's reference group. Other psychological theories view the individual, at any chronological age, as capable of arranging and developing his or her own knowledge and life experiences. These theories emphasize that learning is not mechanical and in order to be genuine the learner needs to participate in it both cognitively and behaviorally.

If Population Education is thought of as an educational process which enables the individual to choose respectively from options in population specific and population relevant matters, then the traditional mode of pedagogy cannot apply.

According to Massialas, the theory of Jerome Bruner, Kagan, Jean Piaget, and Lawrence Kohlberg are most compatible with the process of Population Education. Likewise, the philosophical and social grounds for viable Population Education programs are those offered by John Dewey and his colleagues. Population Education cannot be thought of in terms other than those of inquiry teaching and learning, it cannot be approached through indoctrination, cannot promote one ideology or one view, cannot be teacher or subject dominated and it cannot be forced to accept the politically expedient norm of the time. Massialas

points that in this context, the only legitimate role of the teacher of Population Education is to open alternatives for the learners. A value-free approach is suggested.

d. Outcomes of Population Education: A planned program in Population Education should result in increased understanding of population related matters, in increased individual participation in decisions and actions, in increased sense of population efficacy, and in the development of well thought-out ethical standards against which to measure the patterns of individual and group behavior. The outcomes will be within the same time frame in which instruction is offered. The effectiveness of the program should not be measured in terms of their behavior as adults. The learning outcomes at the time that the students are engaged in relevant experiences need to be emphasized. The underlying basic belief is that schooling is not preparation for life but life itself. Outcomes are expressed in terms of the cognitive skills, attitudes and behaviors to be achieved. Appropriate measures to tap these will have to be developed, not limited to paper and pencil instruments, but should include observation, category systems, in-depth interviews, content analysis, self-reports and the like. A systematic framework for research and evaluation has been proposed for a tested theory of Population Education.

As should be evident from the foregoing discussion, Massialas has attempted to analyze the concept purely from an

educational point of view, emphasizing the justification of Population Education on educational grounds. A theoretical framework for a value free, person-centered, inquiry approach to curriculum development is provided to incorporate the elements of a 'discipline centered' and 'social-problems' approach.

7.2.2. A conceptual model for Population Education curriculum:

Curriculum development in Population Education is examined by Rao (1974) in a broader context of social and curricular changes. The population situation and its consequences for the life of people in India, and the role of education in general, and Population Education in particular are studied from the perspective of an overall social change.

His views and approach to curriculum development are discussed briefly in the following section.

'Curriculum' is defined as 'all the experiences that a learner has under the guidance of the educational institution.' It is a complex of more or less planned and controlled conditions under which students learn to behave, and behave in various ways. Curriculum improvement is a continuous process. Three characteristics of the time directly affect curricular reform, especially in India--the rapid advance of knowledge (knowledge explosion) , the rapid social and technological change, and the prodigious growth of population (population explosion) .

a. Coping with these changes: The individual and the society in which he or she lives must learn to cope with the new

knowledge and technology. The way an individual feels, thinks and reacts to the changing environment, understanding of the forces that operate in the current climate of change and deciding what to teach, when to teach and how to organize the materials of instruction, will continue to be priority issues in curriculum development of all the spheres of learning.

b. Education, an instrument of change: In India, as in several other developing countries, education is considered a key instrument for social change for the realization of those aspirations that involve changes in knowledge, skill, interest and values of the people as a whole. The present system of education which was designed to meet the requirements of an imperial administration needs significant changes. There is an immediate need for revision and improvement of curricula.

Curriculum reform and improvement implies decision-making based on the consensus among concerned people. Educators and curriculum specialist will find it necessary to test their own assumptions and parents and opinion leaders will need to find common grounds for agreement. Curriculum change necessitates 'changing people.' To change the curriculum is to change the factors interacting to shape the curriculum. In each instance this means bringing about changes in people, in their desires, beliefs, attitudes and their knowledge and skill. In short, the nature of curriculum change should be seen as a type of social change—change in people, not merely change on paper.

c. An approach to curriculum development: Rao suggests infusion in view of the difficulties involved in introducing a separate subject. The complexity of designing the curriculum becomes obvious as the subject matter of Population Education cuts across several disciplines.

A conceptual approach, based on Bruner's theory of conceptualization, has been proposed for curriculum development in Population Education. Learning process according to Bruner is 'a network of inferences that are or may be set into play by an act of categorization.' Categorization makes learning easier. Conceptualization makes possible rational behavior, exploring, ordering, solving, creating and predicting. In view of the rapid expansion of various disciplines and knowledge, what to include in the curricula has become increasingly difficult. The emphasis in curriculum development is shifting from facts to concepts and generalizations.

d. Implication for curriculum and teaching: Identifying representative concepts of a field of knowledge serves as a basis for the selection of subject matter content and teaching procedures that will give meaning to the concepts. Since concepts are personal organizations, they cannot be taught as such. Rather teaching is directed toward the formation of concepts. The concepts which evolve include at least two kinds of experiences—cognitive (including, knowledge, intellectual ability and skills) and affective (including, emotional sets, attitudes and

values and appreciations). The concepts thus formed may be concrete, abstract or generalized. To the extent these are developed and imbibed, purposes of instruction may be considered to have been achieved. As such, concepts are fundamental to the selection of subject matter contents, expected behavioral objectives, learning experiences and evaluation procedure.

e. A conceptual model: Based on the above premise Rao provides a conceptual model for developing a curriculum in Population Education. The criteria for the process are specified as follows:

- (i) the curriculum should be flexible and adaptable to meet varied and changing situations,
- (ii) the approach should be conceptual, so that the component parts would not be subject to frequent revisions with the advancement of knowledge,
- (iii) each of the fundamental concepts included should be suitable for instruction at any grade,
- (iv) the curriculum should take into account factors such as the needs and interest of the students, their maturation and developmental level; the needs of the family, community and the nation and also the factor of population explosion.

The three 'key concepts', which form the basis for organizing the elements of the Population Education curriculum, as chosen by Rao for the Indian situation, are—

1. The causes of population growth
2. The consequences of population growth
3. The need for population control or management

Each concept is substantiated by further analysis of the major concept into its elements, which are termed as sub-concepts.' These provide a basis for the selection of desired behavioral objectives.

f. Long range goals of instruction: The long range goals of instruction serve as general guides for the desired outcomes. These are stated in terms of three domains: cognitive, affective and behavior. Since the goal of Population Education is the inclusion of certain values and attitudes in the younger generation leading them to behave rationally, some classification for the several categories of behavior, either intended or actual, had to be formulated. The behavioral domain is specifically developed in an elaborate manner in the model to serve the goals and objectives of Population Education.

g. Classification of population behavior: The term 'behavior' refers to the ways in which individuals think, feel and act or behave as a result of participating in the learning experiences. The various kinds of behaviors are classified under the categories of cognitive, affective and behavioral. A special mention of the behavioral domain is made to explain and illustrate these objectives in Population Education.

The behavioral domain indicates those population behaviors in which the individual applies his knowledge and expresses his attitudes towards a life problem or situation pertaining to population.

- (i) Observable population behavior: This refers to those population behaviors that can be observed and evaluated to some extent in a classroom situation. For example—'how a student selects food in the school cafeteria or how he seeks immunization against disease.'
- (ii) Non-observable population behavior: This refers to those behaviors that cannot be observed systematically in a school situation, but information regarding the behavior is obtained by inquiring of the pupil or his friends, parents and others who are aware of his practices. For instance, 'a pupil aspires to better health facilities and better conditions of living.'
- (iii) Delayed behavior: Those population behaviors that cannot be practiced in life situations for the present, but manifested later, when a person reaches adulthood, and is confronted with the actual situation or when he or she is in a position to assume greater responsibility for his own behavior.

The following classification provides an outline of the sub-concepts, the long range goals, and the behavioral objectives for one of the key-concepts to illustrate the structure of the curriculum which was developed in Rao's model.

Thus, in the model provided by Rao, curriculum is developed through the elements of concepts and sub-concepts, long range goals and behavioral objectives based on Jerome Bruner's conceptualization theory of learning.

7.2.3. A structure for Population Education: In the absence of a curricular model and organized knowledge base, efforts to provide a structure for Population Education was taken up by a group of graduate students at the University of North Carolina, under the supervision of Mary Turner Lane and Ralph Wileman, which resulted in the publication of 'A Structure for Population Education, UNC, 1974.' This structure is analyzed in the present section to highlight the curricular and pedagogical approach adopted in the process of curriculum development.

a. Structure represents the organizing ideas, concepts and generalizations essential and significant to understand a particular discipline, as well as those processes by which new knowledge is generated and used in the disciplines. It is an intellectual framework for ordering knowledge and for processing new knowledge, a set of new systems from which the teacher starts, a cognitive construction that a learner acquires and adds to as he or she processes the data.

A structure helps to identify knowledge for teaching as well as to identify what learners can do with the knowledge. The learner does the structuring, collects and organizes the data, recognizing the relationships as he learns. In this dimension,

the learner is provided with opportunities to use the inquiry skills of the scientist and the social scientist. The structure presented here is based on Jerome Bruner's premise that children could be taught almost any subject at an early age, if the teacher knows the structure of the discipline (The Process of Education, 1972).

This structure is built on three elements—goals, generalizations and behavioral objectives, which can be represented diagrammatically as in Fig. 7.1:

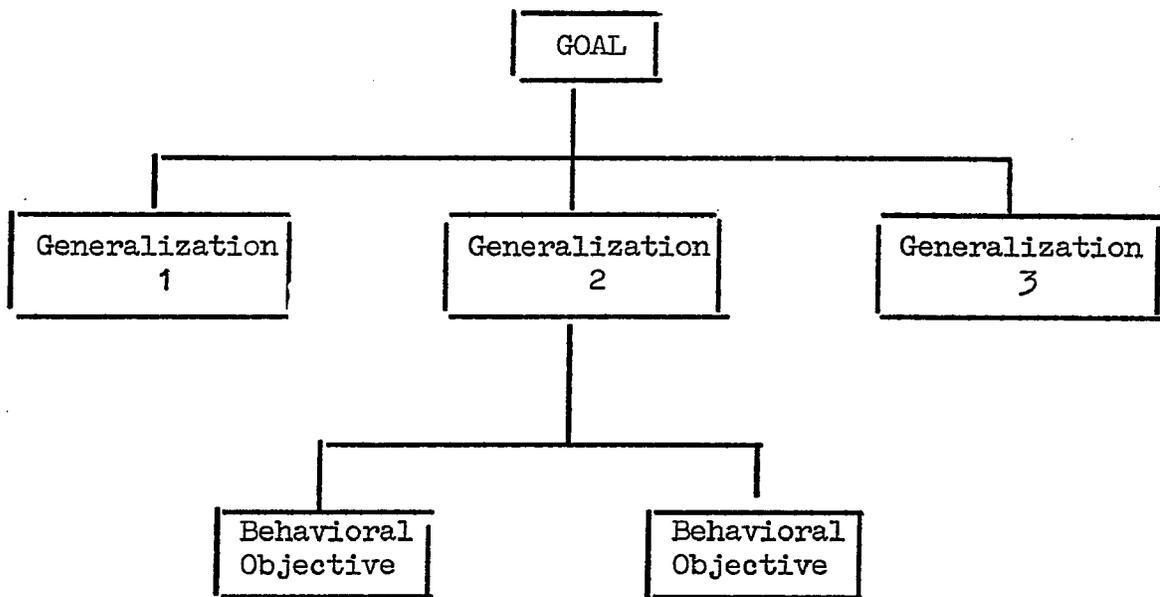


Figure 7.1

b. Goals of Population Education in this structure are to develop understandings and attitudes about population related matters. Generalizations are to direct the teacher's planning and the student's learning in the exploration of population and

related issues. The cognitive structure of the generalization is spelled out as illustrated in the following example:

Goal 1: to develop understanding and attitude about basic population and demographic terms.

Generalizations: (terms and their definitions)

- 1.1 The family
- 1.2. The extended family
- 1.3. The nuclear family
- 1.5. The environment
- 1.37 Demography

- c. Behavioral Objectives: How do educators know if the learner has arrived at the generalizations? Observable evidence is needed for this purpose. Generally, each behavioral objective in this structure has two characteristics: (1) observable behavior and (2) criterion and conditions. Behavior tells what the learner does to demonstrate his learning. For instance—to name, to describe, to classify, to construct, to judge or to perform a task, in short, what learners do. Criterion measures tell teachers and learners about the quantity, quality and time considerations related to evaluating the product of behavior. For example—'name three reasons...' (quantity), specified arbitrarily by teachers based on their judgement; or 'define the term as in standard dictionary' (quality criterion); or 'given the appropriate resources, construct a DNA model in five minutes' (time criterion). This implies, how much, how little, how fast the

learner is expected to respond. Some behavioral objectives also include conditions or the givens, such as, a map or a guide, a table or an instrument. Objectives can be specified as 'orally' or in 'writing.'

Within this framework, examples of behavioral objectives in the present structure for Population Education, are illustrated for one of the generalizations:

Generalization 1.1. A family is made up of people descended from a common ancestor or ancestors.

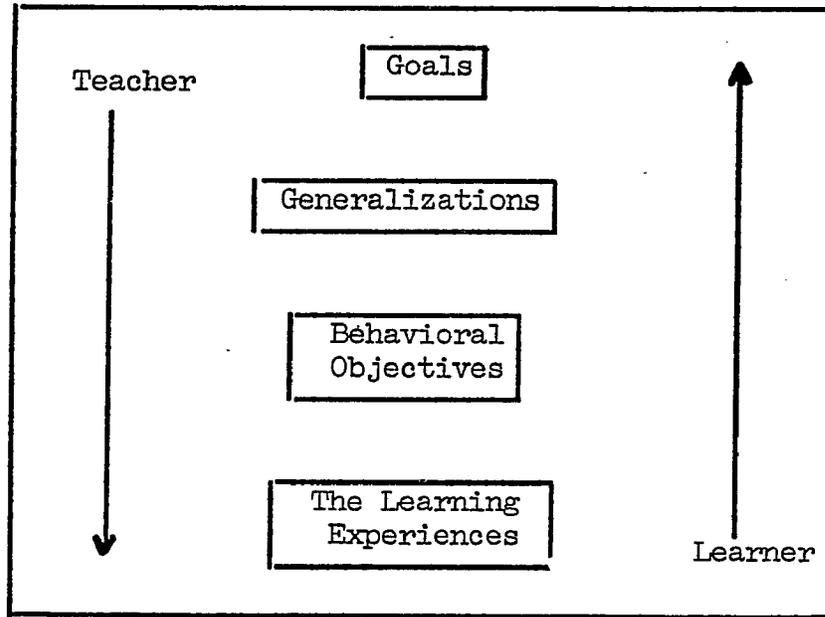
Behavioral Objectives: 1.1.1. Define orally or in writing the term "family"

1.1.2. Draw a hypothetical family tree that depicts three to six generations.

- d. Using the structure: The purpose of the structure is to help teachers in selecting what to teach in the existing subject areas in Population Education, and in planning new units and courses with a more precise focus on Population Education.

The emphasis is on teaching big ideas and understandings for concept development. As a set of understandings the structure is consistent with the contemporary methods in which the learners use the processes and skills of the scientist and social scientist to gather data, examine and classify and make conclusions. The learning process implicit in the structure is the inquiry method appropriate for the learner to use to react to the generalizations. Other teaching methods, such as value clarification, role playing, gaming and simulation can be selected

by teachers to help their students to achieve the behavioral objectives. The teacher and the student use the same steps in both planning for teaching of a generalization and acquiring that generalization, but take those steps in reverse order as shown:



The curriculum approach in this framework is to use the structure to teach Population Education in existing curriculum areas, such as Social Studies, through units on Family, The Community, The Expanding Nation and/or Man and the Future and others. Each unit topic can be broken up into several generalizations and behavioral objectives, suited to the age and grade level of students; or through Science (for instance a unit on Human Reproduction) or Mathematics (unit on Demographic Concepts and Population Statistics); units in the Humanities can include—Literature of people of different times, different

places; descriptions and feelings about self, family size, land and space and elements of nature; in paintings and sculptures learners can view cultural practices, symbols of fertility and marriage and representations of life in diverse civilizations.

A general K-12, a more comprehensive application of the structure can also be developed by a group of teachers and curriculum planners. When a set of ideas in Population Education are developed sequentially for each grade, the learner has a better chance of encountering Population Education as his or her total school experience than a teacher incorporating ideas in her/his subject.

e. Population Education in new units and courses: Population Education can evolve as a distinct field of study, where the emphasis is on population, and not the subject where population is just a facet. Several approaches based on the above structure can be developed for Population Education curriculum, including, units, short courses, independent learning and a basic separate course.

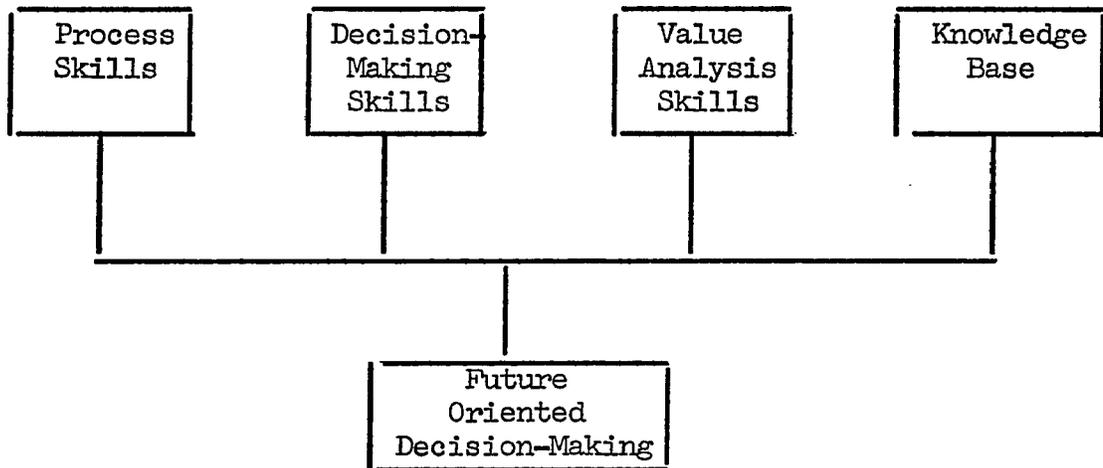
7.3. Methodology of teaching/learning:

Much of the preceding discussion incorporates methodology of teaching. A few illustrations are presented in the following section to elucidate the various approaches advocated in the literature to accommodate the special features of Population Education.

7.3.1. A methodology for 'future-decision-making':

According to Brown (1972) the ethics of Population Education

emphasizes choice and knowledge as well as analytic skills for informed decision-making. Operationally, it represents the type of problem analysis reflected in Metcalf's approach to social education combining value analysis, scientific procedure, decision-making skills, and a knowledge base into a method for decision making oriented to the future. This is represented as follows:



Applied to Population Education, this ethic seeks to help the individual understand the consequences of his behavior on himself and others. It does this by providing him with knowledge about demographic processes and relationships and by helping him examine the implications of the existing trends and the options available. It seeks to aid the student in clarifying and evaluating his values, in developing his skills in inferring the value implications of various acts. It seeks to promote exploration and experimentation with the probable consequences of holding alternative value positions.

This was proposed to be done through a multidisciplinary, future-oriented unit in existing social studies curriculum. Teaching strategies advocated were critical thinking, inquiry, and valuing. Four categories of instructions were proposed as teaching strategies (Brown, 1972, p. 86).

- | | |
|-------------------------------------|--|
| I. Confrontation | A. Focus attention |
| | B. Motivate |
| | C. Generate speculation or hypothesis |
| II. Rule Example | A. Systematic development of ideas and/or skills |
| | B. Hypothesis testing |
| III. Application | A. Require use of ideas, information and skills presented previously |
| | B. Provide clues about the extent to which instructional objectives have been attained |
| IV. Value Judgement-policy decision | A. Relate evaluational questions to an empirical content |
| | B. Require reasoned value judgement |

7.3.2. Motivational considerations:

Paik (1974a) reflects on the motivational aspects of the teaching strategies. In the developing countries where Population Education is focused on the factual knowledge about population dynamics, which helps to understand the nature and the magnitude of the problem created by rapid population growth, a critical task is how to convey most effectively this information and how to motivate the target audiences so that they will develop interest in learning population matters. Without active involvement the students will be depending mostly on cognitive

motivation. According to Paik 'education should be knowledge put to use', it should stimulate the student to think critically and motivate him to acquire knowledge and develop attitudes and behaviors toward desired goals of Population Education.

'Motivation' can be defined as the stimulation to action resulting from an individual desire to reach an established goal or purpose (The Education Encyclopedia, p. 584). With this view, some guidelines are provided by Paik to promote motivation:

- (i) the way in which a student learns is more important than what he learns;
- (ii) levels of motivation for each developmental stage are to be identified;
- (iii) evaluation of student learning, the instructional program as well as testing of the curricular materials, is important in order to have valuable feedback to teachers and curriculum developers, for future inputs and stimuli from teachers, media and curricular materials.

7.3.3. The issue of 'transfer':

Davis (1972, 1976) emphatically points to some of the missing components which are significant in developing curricula in Population Education. He is of the opinion that little thought has been given to transfer, the issues of values and ethics and the methodology involved.

The theory of transfer suggests that the curriculum developer should be quite clear in the objectives he traces out and the paths he envisages as leading from one set of circumstances over time to later life in a very different set of circumstances. This is especially significant for the goals of Population Education programs of developing countries. According to Davis, a linkage from learning to practice and the sequence involved should be kept in mind. It is in structuring the information to enhance discovery and problem solving, reinforcing the learning with experience and activity to build these links to bridge over the time factor. With disciplined attention and motivation, the learner can go beyond the data at hand to new insights, inferences, and personally relevant applications.

Regarding values, Davis observes that some educators and programs take the position that in Population Education, the learner also develops an awareness that something must and can be done about a situation. This brings the curriculum designer to the problem of handling ethical values or moral considerations. Values, ethics and moral issues are unavoidable in most curricular areas, but especially in Population Education. This should be dealt with explicitly. According to Davis, norms are not moral precepts drilled into the learner by rote and with the reinforcement of punishment and rewards given and withheld. The model and base of moral education as conceived here is traced from the work of Kohlberg, which in turn is based on

Piaget's conception of cognitive development. In this model, the learner is not viewed as a receptacle into which facts and principles are poured or as an object to be socially conditioned, or as a creature at the mercy of conflicting instincts and drives, but rather as a rational being engaged actively in trying to make sense out of the world with which he interacts.

In moral education, therefore, there is a distinction between the content of the field and the structure of the field. The relevant content in Population Education might deal with the desirability of small families and births. Reduced natality might be held good from an individual, family, community, country or world standpoint. Structurally, the result of the learning experience in Population Education should be a belief in the norm, demonstrated by the capacity to offer a rationale and support for it. The structural objectives of a curriculum in Population Education should be the stimulation of successively higher levels of moral reasoning over time, with the content appropriate to the field of Population Education.

Students should be involved in community activities, such as field trips, project preparation. Work and involvement are important ingredients in Population Education.

7.3.4. A case for the problem-solving method:

Kline's listing of three techniques in Population Education, namely, lecture, the printed word and computer assisted instruction in providing information, persuading, and reinforcing, has

been strongly criticized by Chauls (1974a), who points that in Kline's view the student is not viewed as a source of knowledge, much less as an organizer of the smaller pieces of knowledge, or as a creator of new attitudes and values. He remains the object of his own education, rather than his subject.

According to Chauls the school's essential role should help the students learn how to inform, persuade and reinforce themselves, weighing the advantages and disadvantages of the various positions. Rather than using the teacher as the source of data, students can be encouraged to exhaust their own knowledge first, and then turn to external sources of information. The teacher's role should be that of a catalyst, helping the students to learn rather than teaching them. An open-ended inquiry approach is strongly advocated.

The appropriateness of the problem-centered approach in Population Education is justified by Shariatmadari (1974, p.8), as follows:

With regard to the concept of education and reconstruction and reorganization of experience, and the concept of learning as the modification of behavior through the process of experiencing, the problem-centered approach might be the most appropriate method of teaching.

This approach, according to various situations, includes lecture method, experimentation, group discussion, project method, unit method and the use of instructional technology. In this approach opportunities are provided for the students to learn how to identify the problems and to state them in their own words. This method enables the students to collect relevant

information, to use knowledge in dealing with problems, to organize and analyze data, and to draw some conclusions and find solutions for problems.

7.3.5. Values, ethics and Population Education:

Discussion on Population Education suggests two significant values of concern to educators: survival and the quality of life. Conclusion oriented or open-ended approaches will depend upon the values assigned highest priority. An open-ended approach has been advocated by the majority of the programs and authors. Viederman(1973b) points to the cautions to be taken in the open-ended approaches. In the presentation of information and facts, all too often there is not agreement on what the facts are, or which facts are pertinent or how the facts should be interpreted. For instance, the seemingly unintentional bias in textbooks in the handling of women's roles, and stereotyped sex roles. Even scientific material is not without this bias, such as 'over-population is the cause of environmental problems.' Viederman further observes that the development of materials in response to a perceived problem is done at a time when the dimensions of the problem are not clearly delineated. The instant expertise caused by crash programs tends to emphasize a narrow aspect in the instructional materials. Viederman (1973b, p.2) concludes his observations thus:

Since Population Education involves a consideration of alternative futures, a discussion and exploration of values is inherent in the program. But a distinction must

be made between types of values to be dealt with, namely, procedural and substantive. By virtue of the nature of the educational process teachers have a right to teach procedural values, such as 'critical thinking is better than uncritical thinking.' Students must accept the scientific method as a procedure in teaching, without it education would be impossible. Teachers however should not teach substantive values, such as 'democracy is better than totalitarianism', or 'small families are better than large families.' This does not mean that the issues should be avoided for one of the goals of all educators is, or should be, to train students to evaluate evidence within a framework of critical thinking.

He further states:

Population Education will be most successful if the student is viewed as an inquirer. Accepting that it is impossible for teaching to be 'value free', Population Education programs can strive toward 'value fair' positions. Positions should not be preached. Rather, opportunities for evaluating competing theories and for exploring values and their consequences must be provided and encouraged.

7.3.6. A range of general methodologies:

1. Some of the proposals drawn for the implementation of Population Education, such as the proposal drawn for programs in Indonesia (Institute for Teacher and Personnel Development, Indonesia, 1971), and the Handbook for teaching strategies and techniques relating to Family Planning, Population Education, and Quality of Life (Amer. Home Eco. Assn. Washington, D. C., 1974) provide a detailed range of instructional methodologies appropriate for Population Education. These are summarized as follows: (Indonesian Proposal, 1971)

- a. The lecture method: This method can be adapted to present facts, opinions, to stimulate the student to make certain assignments in order to create attitudes

concerning population to help the student summarize his knowledge and understanding, and to introduce new topics. This method requires the teacher to have the ability of public speaking.

- b. The question and answer method: Can be used to check the results of Population Education activities previously carried out, to direct the method of thinking and understanding through the questions presented, to give the student an opportunity to present matters which are not clear to him. This method is effective in small groups.
- c. Discussion method: To stimulate the students to participate in the discussion. This method requires presentation of an interesting, issue oriented topic.
- d. Recitation method: The recitation method is better used when the teacher intends to encourage the students to develop further thoughts on population given as assignments.
- e. Field trips: The excursion methods are useful for direct observations of events related to population, for instance, of ecological or living conditions, health situations, big city traffics and others. This method requires purposeful and good preparation.
- f. Other methods that might be considered are the socio-drama, panel and symposium methods. The teacher

cannot disregard simulation values as methods of interaction to bring the students to real situations through simulated activities.

The handbook prepared by the American Home Economics Association (1974) organizes the teaching techniques and approaches into one of the three areas--class organizers, class activities, and class materials. Each is described in brief:

- (i) Class organizers: These include--brainstorm, circular response, colloquy, committee groupings, debate, fishbowl, forum, laboratory, large group discussion, lecture, opposing panel, panel, question and answer, small group discussion and buzz group and symposium.
- (ii) Class activities include anecdotes, anecdotal records, assignments, case study, contrived incident, demonstration, field trips, games, interview, learning by inquiry, learning packages, constructing, pantomime, programmed instruction, projective techniques, questionnaires, resource persons, role play, simulation, skits, structured observation, and student reports.

(iii) Class materials: These include—bulletin board, cartoons, charts, diagrams, graphs, display, exhibit, flash cards, flip chart/tear sheets, homemade movies, magnetic board, models, newspapers, magazines, pictures, photographs and posters

Each of the class organizers and activities is defined in greater detail in the handbook.

2. As is observed by the ISCOMPE (UNESCO, 1978), within the programs of Population Education, many types of methods are in use today without an agreement about which method or combination of methods are most likely to achieve the goals of Population Education or be effective in different educational settings. Requisite research is needed in the area. Methodological questions are closely related to research areas, such as how learners can investigate population related interrelationships within their families and communities and prevailing folk-demographies.

Teaching/learning methods: Teaching/learning methods suggested in the literature and programs for the formal settings as reviewed by the ISCOMPE reflect somewhat diverse perceptions of the process. The kinds of methods available to the teachers in the classroom are limited by a wide range of factors, including the administrative structure of the school, the organization of the school, teacher/pupil ratio, the quality of in-service and pre-service, availability of teaching/

learning materials, and the past learning experience of the students and the perceived roles of teachers and students.

These methods range from highly-formalized and structured class lessons or lectures through non-directive participatory group work to non-structured and highly informal discussions, from methods which are largely learner centered as enlisted in an Asian manual exphasizing participation and learning by doing, to methods which appear more teacher-centered. They are summarized as follows:

Learner-centered: These include:

1. Local field surveys: to collect, record and analyze local population data
2. Group discussion: to report results and discuss findings
3. "Buzz sessions": to debate different interpretations of information and results
4. Case studies: to record evidence and summarize problems.
5. Simulation games: to assess the repercussions of population events

Teacher-centered: These include:

1. Lesson series: to provide learners with a knowledge of population events and trends
2. Analysis of written materials: to help learners extend their knowledge and to raise "popular issues"

3. Written reports: to encourage learners to summarize information

4. Class debates: to enable learners to discuss topical population-related events

5. Revision of topics: to encourage learners to record findings

6. Evaluation: to test what learners know about the topics covered

Research indicates the existence in the learning situation of variables which cannot always be controlled or pre-determined, such as teacher's personality or personal style of teaching, her interest in the subject and the relationship with the learners, and the learners' motivation. Suitability of particular methods would still largely depend on the prevailing learning contexts or environments.

Some processes of population learning and teaching/learning methods:

Six skills appear to be basic to the task of problem-solving. They are the ability to:

1. Identify issues and problems,
2. define the nature of these issues and problems with their specific components,
3. collect and select relevant information,
4. organize the information into meaningful categories for
5. analysis and judgement in order to

6. decide upon and/or plan alternative responses now and in future.

7.4. Summary:

Section I of Chapter 7 discusses the various viewpoints in developing a curriculum in Population Education. These are reflected in the action programs and the theoretical appraisals of the concept by various experts. The two dimensions of curriculum development are analyzed in order to formulate the basic principles and theories inherent in the process of curriculum development.

Action programs include the PEP program from the Philippines, the UNESCO project and the Delaware Project. The theoretical points of view have been illustrated through the conceptualization of selected experts, such as Massialas and Rao. Methodological considerations in Population Education have been another area of theoretical discussions and proposals. An attempt has been made to synthesize and organize these to present the range of alternative methodological techniques that can be used in Population Education.

Section II of Chapter 7 analyzes the mechanics of the process of curriculum development within a systems perspective.

CHAPTER 7: CURRICULUM DEVELOPMENT IN POPULATION EDUCATION

SECTION II

THE MECHANICS OF CURRICULUM DEVELOPMENT AND IMPLEMENTATION

7.5. The process of curriculum development

7.5.1. The sequential steps

7.5.2. Systems approach and planning to curriculum development--the 'Wayland-Model'

A. Guidelines for curriculum development

B. Contextual factors related to curriculum development

7.6. Implementation strategies

7.6.1. Modes of inclusion

7.6.2. Population Education through disciplinary and interdisciplinary approaches

7.7. Summary

CHAPTER 7

SECTION II

THE MECHANICS OF CURRICULUM DEVELOPMENT AND IMPLEMENTATION

7.5. The process of curriculum development:

The process of curriculum development in Population Education has been formulated and spelled out both in terms of—i) the general guidelines and the basic sequential steps necessary, and also, in terms of ii) the total systems perspective, taking into consideration the systems aspects and factors involved in the process. Both these perspectives were examined in the present section to identify the major considerations in developing a curriculum for Population Education.

7.5.1. The sequential steps:

Mehta (1969a), Paik (1974b) and others have identified the following necessary steps:

- a. Theoretical considerations: Curriculum development is a complex and multidimensional task. Four fundamental questions must be answered satisfactorily in developing the curriculum and the plan of instruction.
 - (1) What educational objectives should the educational system seek to attain in Population Education?
 - (2) What educational experiences can be provided for the attainment of these purposes?
 - (3) How can these educational experiences be effectively organized?

- (4) How can it be determined that these purposes are being attained?

Procedures of curriculum development may vary from system to system, but a basic sequential framework is necessary.

b. Practical steps:

- (i) Conducting a status study: Survey of what is being taught with regard to population in health education, social studies, economics, general science and other subjects.
- (ii) Clarification of the concept of Population Education and developing a point of view: The next step is to clarify the concept of Population Education, identification of clear cut objectives, and development of a consensus and point of view on the purposes formal education should seek to attain. A careful review of the broad canvas of the contemporary society—its socio-economic needs, the direction it is taking and its planned growth; the influence of science and technology on the life of the people; the pulls of tradition and the forces of change, needs of the coming generation and aspirations of the nation, is a prerequisite for the identification of some major social values that may be of relevance for the introduction of Population Education in the curriculum. These values

would then form the major objectives to be achieved through the new curriculum and provide the necessary answer to the question of the objectives of the program.

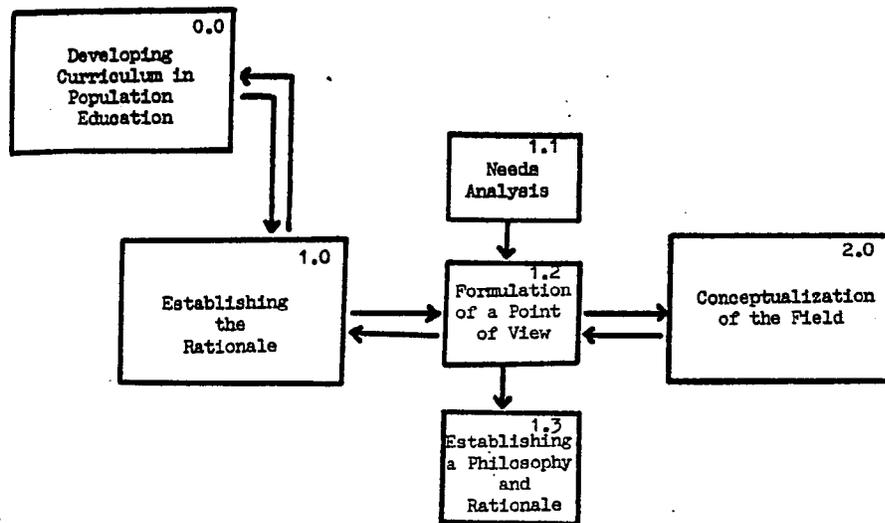
- (iii) Formulation of the knowledge base: In the case of Population Education, this is an important step in curriculum developed. The various frameworks and processes for the formulation of knowledge base have been discussed in Chapter 5.
- (iv) The selection of content: A next step is the identification of the major understandings, concepts, information and facts relevant to population context of a nation and the world, and the selection of the factual knowledge on population dynamics and its implications for life in various aspects. The criteria for such a selection would be provided by the objectives in terms of desired changes in attitude, behaviors and values, etc. Core concepts thus chosen will form an outline of the course content to be incorporated in the total curriculum.
- (v) Preparation of instructional materials for teachers and students: Textbooks, handbooks, supplementary readings, audio-visual aids and other guide material will have to be prepared next by panels of people representing different fields and different competencies. This will be followed by--

- (vi) Try out and feed back
- (vii) Teacher preparation
- (viii) Developing a strategy of implementation and modes of inclusion
- (ix) Program revision
- (x) Modification and reimplementation

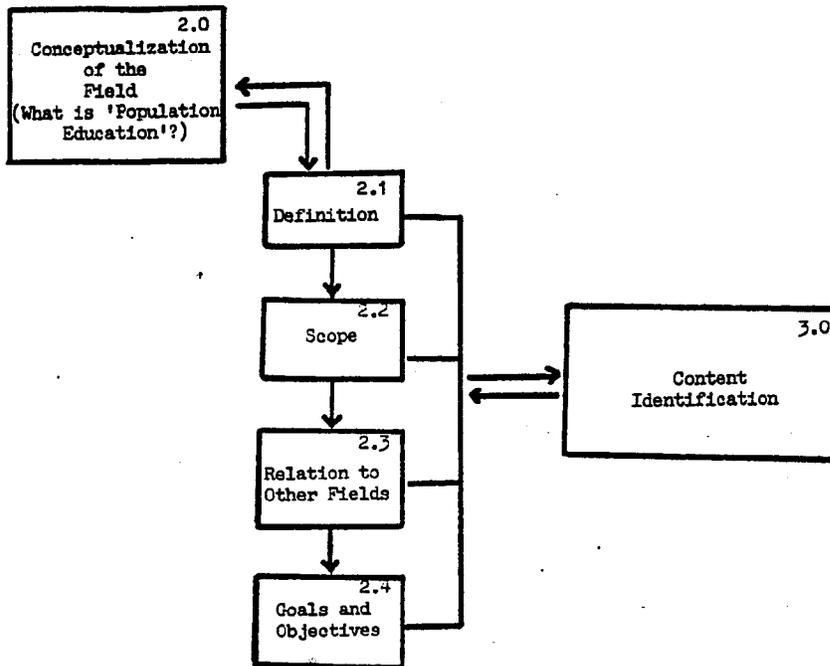
A flow chart is developed by the researcher to lay out the scheme of the sequential steps in the process of curriculum development (Flow Chart 7.1).

7.5.2. Systems approach and planning to curriculum development in Population Education: The 'Wayland Model':

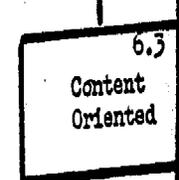
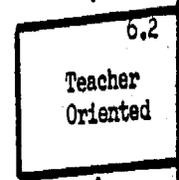
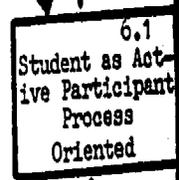
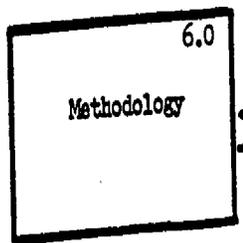
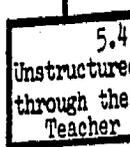
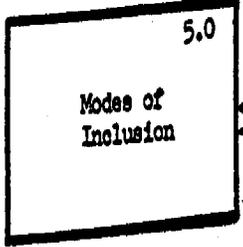
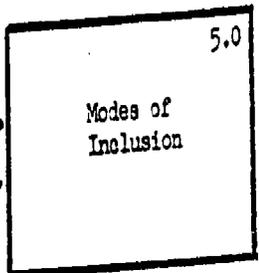
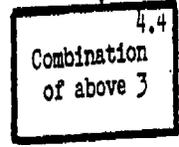
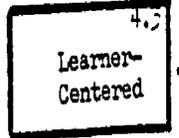
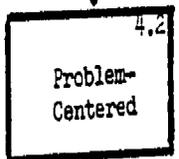
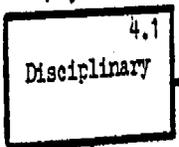
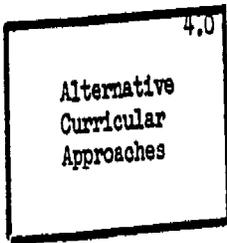
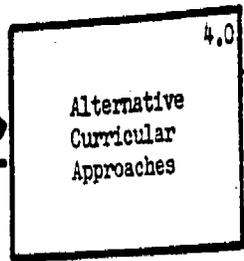
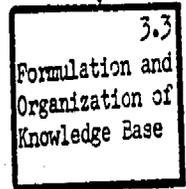
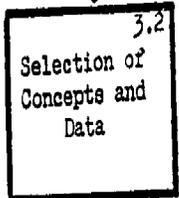
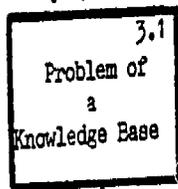
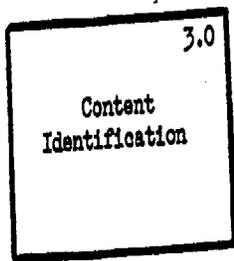
Dr. Sloan R. Wayland, who can rightly be called 'the father of the concept of Population Education', has worked as a UNESCO consultant for Population Education, and has extensively and exhaustively researched the area under the sponsorship of the Population Council, New York. His analysis and interpretation of the field through his many papers, (see the Reference list) and the Sourcebook for National Population Education Programs (1975-draft copy) is based on the concept of systems approach, inclusive of all the relevant contextual factors and processes to be taken into consideration in developing a curriculum for Population Education. His point of view is analyzed through his several papers in the following section and synthesized by the researcher to formulate the 'Wayland Model' in order to provide the educator with curriculum development guidelines within a systems perspective.

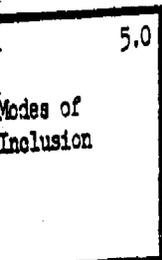
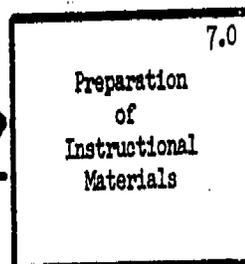
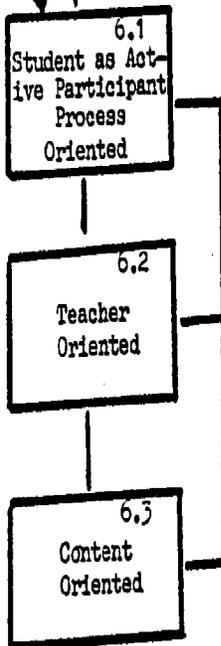
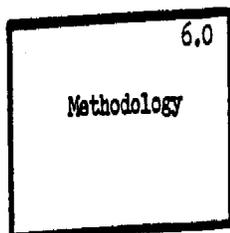
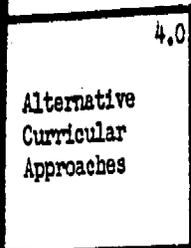
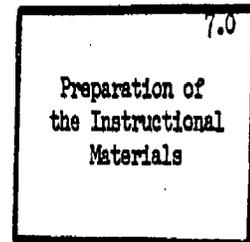
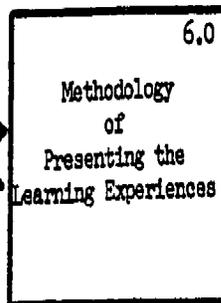
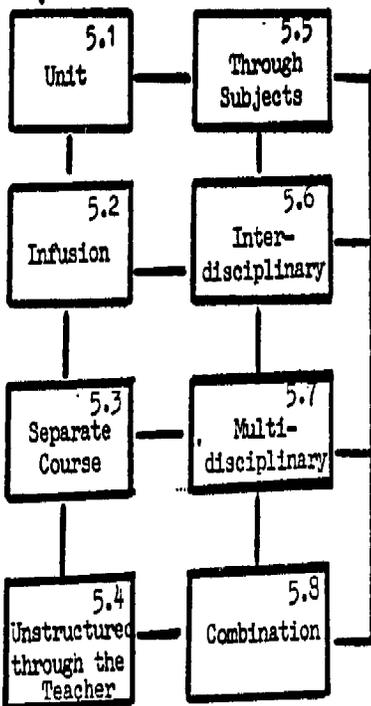
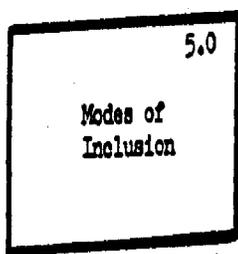


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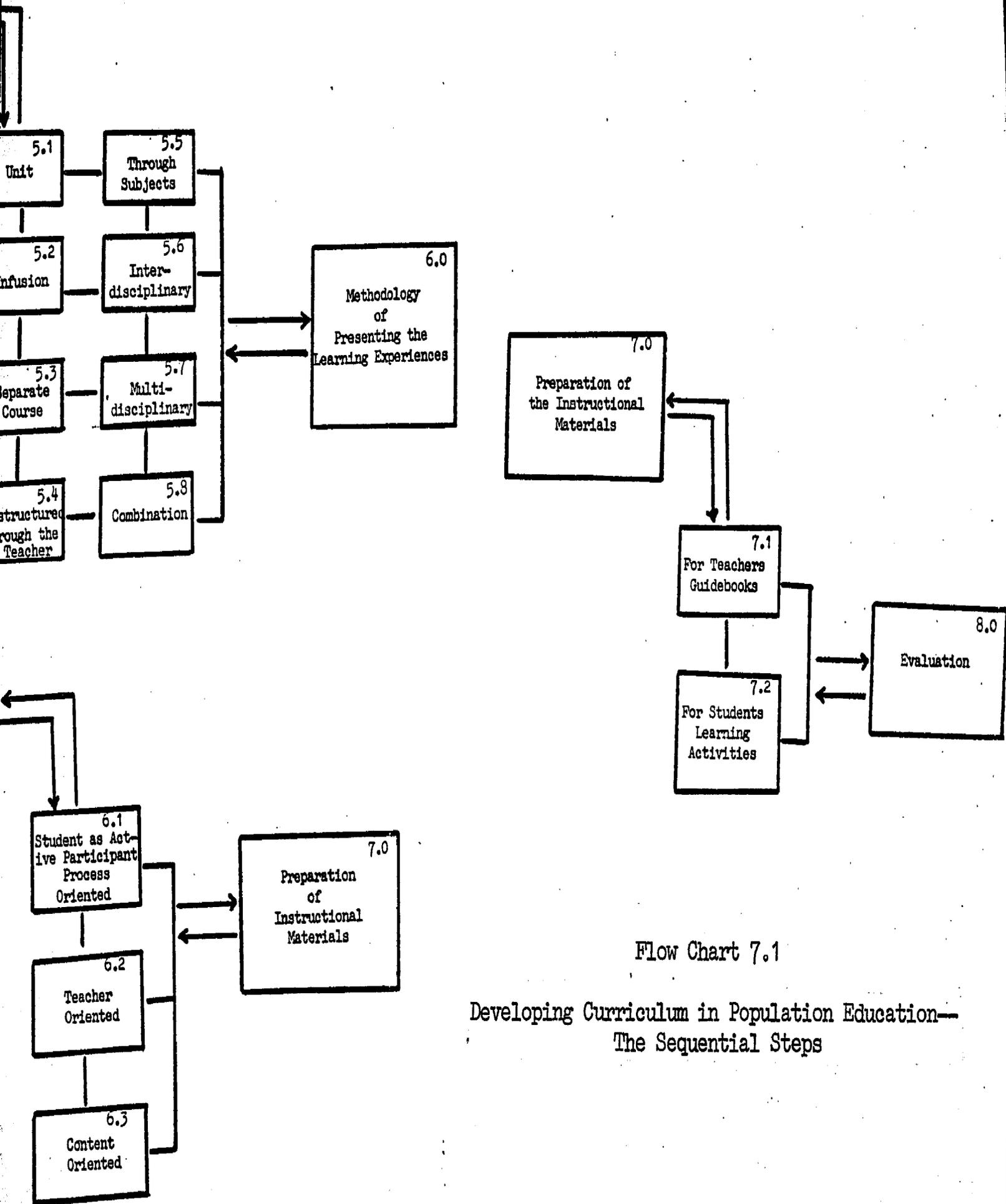
Alternative Curricular Approaches





Flow

Developing Curriculum
The Se



Flow Chart 7.1

Developing Curriculum in Population Education—
The Sequential Steps

a. Significance of the context of innovation:

A systems approach to curriculum development takes into consideration the external and internal factors related to Population Education. The assumption underlying this analysis is that curriculum innovations which do not take into account the systems characteristics and the sociological context of the educational system will not be successful. The significance of contextual factors have been emphasized by several authors and in various national programs, (Jayasuriya, 1972; Jocano, 1974; Mehta, 1969; Paik, 1970; Poffenberger, 1975; Udomsakdi, 1972; and the Proceedings of the National Seminars in India and the Philippines). Wayland (1971b, 1971c, 1971d, 1972f, 1975-draft copy) weaves all these points of views within a systems perspective.

Emphasizing the significance of the social context for the innovation, he states (1971b, p.26);

...the functional interrelationship between the various units of the educational system is of particular relevance for the consideration of innovation....An innovation represents a deliberate effort to modify in some measure one of the attributes of the system, and the appraisal of that innovation cannot be fully made without examining the consequences for other attributes of the system. The ultimate test of an innovation is whether it can be institutionalized, i.e., can the necessary changes in attributes throughout the system be effected.

This extends the area of inquiry beyond the innovation in its own terms and asks what the systems consequences are of the innovation being considered. Several areas have to be analyzed within the sociology of the curriculum, such as the relationship between the social values and the educational values of the

society which reflect themselves in the educational system. These values act as filters in the selection of what is to be included in the curriculum. Curriculum patterns and social characteristics of the educational system act in both directions. The factors which have to be taken into consideration, range from— the framework within which the curriculum is organized, the mix of students that have to be served, consideration of the tension between providing common educational experiences and specialized curricula, student staff relationship at different levels, sequentiality and cumulativeness of various subject areas and, staff interactions as related to curricular patterns. The occasion for interaction among staff members becomes even more significant if the curriculum innovation considered requires content which cuts across more than one traditional subject area, as in the case of Population Education.

Wayland (1972f) observes that when a change in curricular content is being considered by professional educators, a series of basic questions must be raised and factors taken into account in developing a curriculum.

- (1) Why should a new content be included in the curriculum?
- (2) What is the appropriate content?
- (3) What changes in the present educational system are needed for the change?
- (4) Outcomes with relation to time invested and resources,
- (5) Series of steps needed to introduce the change,
- (6) Availability of personnel and resources.

The factors to be taken into account in the selection of Population Education content include: the nature of the learner, the distinctive features of the body of knowledge from which the content is to be drawn, the specific outcomes desired, the qualities possessed by the staff, and the constraints posed by the structural aspects of the education system and its programs. Some of these contextual factors will be discussed later in the section.

Educational changes involved in introducing Population Education will vary from country to country, and the answers can be determined by professional educators in each country. The continuation of the innovation depends on the special features of the system, such as modification in the pre-service of teachers, in-service material for teachers, inclusion of Population Education in the external examination, effective means of feedback from the teachers and so forth.

The structure of the individual educational system will determine the curricular strategies for introducing Population Education. Highly centralized educational systems will have different strategies than where the control is at the local level. In India and the Philippines with national programs in Population Education, the task of preparing a curricula is managed at the national level, in view of the fact that Population Education is a part of the broader developmental and educational policies.

Effective research, development and teacher training mechanisms will need to be developed in Population Education. Background research in the attitudes of teachers and students, assessment of existing research and new research to fill the knowledge gaps are among the factors crucial for Population Education curriculum. Another factor of great importance in developing Population Education curriculum is the identification of general curriculum reform efforts in other areas to locate appropriate infusion points for Population Education.

b. The Premise for developing Population Education curriculum:

The term 'curriculum' is used here to refer to the organized set of learning experiences including materials, instructional activities of the students and the teachers, and evaluation.

The premise on which curriculum development will be based is very important in Population Education. The relationship of Population Education to areas already in the curriculum, and to those which are not in the curriculum, will have to be analyzed to establish this premise. According to Wayland (1975---draft copy) these relationships can be examined from several perspectives. Areas not included in the subject centered curricula, such as sex education or family life education have overlapping content with Population Education. The curriculum developer may choose to operate on the premise that the emergence of Population Education changes the nature of the claim of those areas, and aspects from these could be selected where relevant for the

goals of Population Education in a particular country. From another perspective, he may look at various subjects which are not now offered, including Population Education, to explore the possibility of introducing elements of some or all of these through a common program. Whether this will be called 'Population Education' is a matter of choice.

c. A conceptual outline for curriculum development:

In the view of Wayland (1975—draft copy) the basic approach to building Population Education curriculum should be the same as if instruction were to take place in a new self-contained course, including the specification of instructional goals, identification of the relevant concepts and data, the arranging of content in logical sequence and attention to the means of evaluation which would seem appropriate.

He emphasizes that the process should be undertaken regardless of the mode of inclusion adopted. This framework will aid in insuring that the range of content and the sequence of instruction is not lost in the process of examining the content of existing courses. The educational audience of this model course will have to be assumed at a higher level, such as upper secondary, a level at which the cumulative result of earlier instruction in a number of different courses at a number of different levels would be evident. The full content of the course should not be assumed to be final, and should be updated when modifica-

tions are called for. An illustration of this approach is Population Education: A Curriculum Guide for Higher Education (1974).

The content of the existing courses and supporting instructional materials should then be carefully examined to identify the specific population content and the emphases which are a part of the present curriculum. The content of the model course should be actively used in the process to determine the points in the total curriculum, where the concepts and data can be inserted in a fashion which will protect the integrity of existing courses. The Population Education unit to be inserted should ideally be of such nature that the logic of the existing course is not disrupted, at the same time that an important building block in the Population Education sequence is put in place. In practice, the attainment of these goals will involve a compromise of two sets of goals, including those of the subject and the Population Education goals. This implies that a simultaneous participation of personnel from various subject areas is an essential aspect of curriculum development.

The curriculum development and implementation strategies will vary from country to country. The recommendations and guidelines should thus be examined in the light of local circumstances.

d. Tasks for the curriculum development staff:

In developing such a curriculum, Wayland (1975-draft copy) identifies the following tasks for the curriculum development staff:

1. The curriculum development staff should be given adequate time for background preparation.

2. They should give high priority to a systematic formulation of the knowledge base. Areas of knowledge gap should be recognized. In the absence of a country specific sourcebook, this will be a necessary step and will also be useful in teacher training programs.

3. Research available dealing with attitudes and perceptions of students and teachers concerning population and closely associated aspects of life should be carefully studied for the understanding of the context within which Population Education is functioning. The analysis of the values of students and teachers will aid in building the curriculum for in-service education for teachers as well.

4. The goals of a national population program should be developed after careful assessment of the special population circumstances and future prospects of a country, including cultural values and aspirations, giving meaning to those circumstances. The relationship between circumstances and aspirations will help in setting up priorities among the potential goals of the Population Education programs. The assessment should recognize the differences of rural-urban population circumstances, different communal-group populations and so forth.

5. In the curriculum design and instructional units, the individual and family level should be given sustained attention. In the situation of knowledge gap at the micro level, the curriculum specialist will need to use considerable imagination in

finding ways of helping the student relate his personal stake in population developments. There is likely to be a serious conflict between the individual welfare and the collective good. The conflicting as well as complementary values between the individual and the collective need be considered.

6. Instructional units should give attention to the affective as well as the cognitive domain. This is particularly crucial in the case of Population Education. The teacher is faced with the fact that the attitudes and perceptions which the students have developed are likely to be seen as fundamental truths. Changes in their perceptions and values will not occur by routine exposure to other points of view or to the presentation of systematic bodies of data—a problem present, whether the goals are specific in terms of the new desired attitudes, or are formulated in terms of providing for critical assessment of their perceptions and values. Approaches to teaching and providing learning situations have to be considered in view of these constraints.

7. A detailed, comprehensive, and integrated syllabus of Population Education should be prepared as the framework for the preparation of instructional units.

8. Prior efforts at curriculum innovation, especially in the area of evaluative feedback should go hand in hand with curriculum development.

9. Reference and instructional materials for teachers should be prepared in substantial detail. Instructional materials for students should be more complete, even though mass distribution may not take place. There is the possibility that a detailed material for teachers might reduce the chances of a creative approach on the part of the teacher.

10. Evaluation of in-service training sessions and of the classroom experiences of teachers should be followed carefully through the curriculum development process.

11. Regular communication should be established between the curriculum specialist and his or her peers in the program in other countries for the exchange of experiences, information and procedures for building the curriculum.

12. Problems of curriculum development in Population Education should be recognized for this new field, such as the absence of an advanced level textbook or sourcebook, identification of a knowledge base prior to selection of content, need for country specific content, the system of cultural values specific to a country and sub-cultural groups and the unavailability of information and data in many areas. During the process of curriculum development, identification of important gaps may serve to give direction to future research activities.

13. In the formulation of a knowledge base, the content should be comprehensive, manner of presentation should be understandable to non-specialists, at the same time acceptable

to the specialist of the field of study, and it should be organized in a systematic manner with its own internal logic rather than a collection of separate and unrelated units.

14. Curriculum development will be taking place at various levels in the area of Population Education—international, national, local and individual. Linkages and communication among and between these levels are essential for adopting suitable strategies for curriculum development.

15. In a systemwide perspective, sequence and timing of Population Education programs will have significant bearing on developing the curriculum. Three patterns have been identified by Wayland. They are the incremental pattern, where a program is introduced in a few selected places, then extended to other places; a systemwide approach, in which Population Education is introduced simultaneously throughout the educational system after the preliminary work is done, and the sequential approach, where initially the focus is on one level in the educational system and over a period of time the program is introduced in sequence up or down the academic ladder. A combination of these three is likely to occur. The curriculum staff will have to be aware of these patterns to perform their task effectively.

e. Contextual factors related to curriculum development:

The significance and the role of various contextual factors have been specified in different programs and documents on Population Education by many authors and experts (Jayasuriya,

1971; Mehta, 1969, 1972; Wayland, 1973; Johnstone, 1974; Wadia, 1969, 1973; Russo, 1972; and many others). According to Deer (1974), planning of a curriculum innovation involves the examination of three major dimensions—the perceptions on curriculum, the perceptions on the role of education, schooling and the educational system and the perceptions on population and Population Education.

The role of the various contextual factors is examined in the following section inclusive of these three perceptions.

1. According to Wayland (1975, draft copy) curriculum development and curricular approaches will be affected by the perception of Population Education as a curricular area by educators. In the traditional approach to curriculum innovation, educational leaders assume that the basic pattern of Population Education will be similar in nature to other aspects of the curriculum. The task is to institutionalize Population Education so that it will become as much a part of the continuous educational system as any other curricular area. Properly prepared instructional materials and trained teachers will be able to make population issues meaningful to the students. In this approach they argue that the linkage of general reform with a particular innovation is not an effective strategy for bringing about reform and will prevent Population Education from becoming an operative program. In the non-traditional approach, other educational leaders view

Population Education as a means for raising very fundamental questions about the characteristics of the educational systems in their countries. They urge that the development of Population Education be used as a model for a more general reform in the educational system. They see population issues as problems to be solved and want the curricula to be problem oriented. It is assumed here that the affective domain dealing with attitudes held towards birth, death and other population related phenomena requires a non-traditional pedagogy.

To date implementation of Population Education programs has been an additive process. Its introduction has involved the adaptation of a broad range of strategies and methodologies. To what extent these are innovative is context dependent. In those context where learning systems are not in the process of significant changes, Population Education per se will not initiate large scale change within the system. When the educational systems are undergoing change in terms of curriculum content, organization and methodology, Population Education has a potent contribution to make in support of the changes, especially where the change is directed towards the relevancy of content and increases learner participation and the acquisition of skills which will have utility in the future life of the learner.

2. In view of the total system, Wayland (1973) discusses the following general and specific factors related

to Population Education curriculum:

- (i) Attributes of the students
- (ii) Characteristics of the teachers
- (iii) The community context
- (iv) Special characteristics of the knowledge base
- (v) Nature of the educational system and its curriculum

Special characteristics of the knowledge base was discussed at length in Chapter 6, and the nature of the educational system was referred to in section 7.5.2. (a). Special mention is made in the following discussion on the nature of learners and teachers, and the community context.

Regardless of the pedagogical approach advocated, it is evident that population and quality of life issues are deeply enmeshed in the value systems of students and teachers. Educators need to devise means of assessing the nature of these values and to develop methods for dealing with values in the instructional process. Appreciation of the nature of folk-demography of the students should be kept in mind. Personal and individual population related matters such as family size, spacing of children and other micro-level issues should be considered without raising personal problems for those who are members of large families.

- (i) The student or the learner: Pointing to the psychological readiness of students to study population Russo (1972 , p.6) states:

Student is not an isolated unit... and should be viewed in the situational context—the personal, social and cultural factors...A knowledge base of how cognitive and behavioral structures are developed. Students' mental abilities are continually interacting with the inputs of socio-cultural milieu. His reaction to a population issue will not only depend on his personal knowledge, values and cognitive abilities, but also on how the material is presented and who is presenting it. Even if the facts are presented in most objective of fashions, one cannot assert that the facts themselves are neutral, even though he/she is neutral....Exploration of alternative value systems in an atmosphere which permits the maximum discussion of the issues which are at stake is proposed.

Other attributes of the students to be considered are their physical, mental, emotional, socio-cultural and psychological development; their age/sex factor; previous population learning through media and non-school programs and their knowledge and attitudes at various ages. Knowledge and attitudes will not be uniform in view of the variations among students coming from different social class and ethnic background. The cognitive and affective aspects of Population Education must take into account the maturational level of students. The future orientation of population related behavior and the affective character of the decisions in that area impose pedagogical problems of teaching. It is also pertinent to know the students' attitudes towards the function of school. Any field which may be thought of as a problem rather than a subject area and an area in which effect is high will be accepted with resistance.

(ii) Characteristics of teachers: The level of the general preparation of teachers, their attitudes and values in population related matters, and the degree of structure required by them are some of the characteristics related to teachers which are relevant to Population Education. Since this is a new area and involves concepts and data from more than one discipline, special demands are made of the teacher. Until greater consensus develops as to alternative structure of curriculum, teachers will need to exercise considerable personal initiative.

(iii) The community context is a necessary background for curriculum planning. The degree of reinforcement from the community, the attitudes of parents, community resources, social, cultural and political meanings of population and the general cultural milieu of the community provide the curriculum developer with the necessary background information.

f. Illustrations of Systems Planning in Population Education:

A systems approach to curriculum development is illustrated in the proposal for the Population Education program in Thailand (Udomsakdi, 1972). This plan is presented in the following detailed chart (Chart 7.2) to give an overall view of the systems perspective.¹

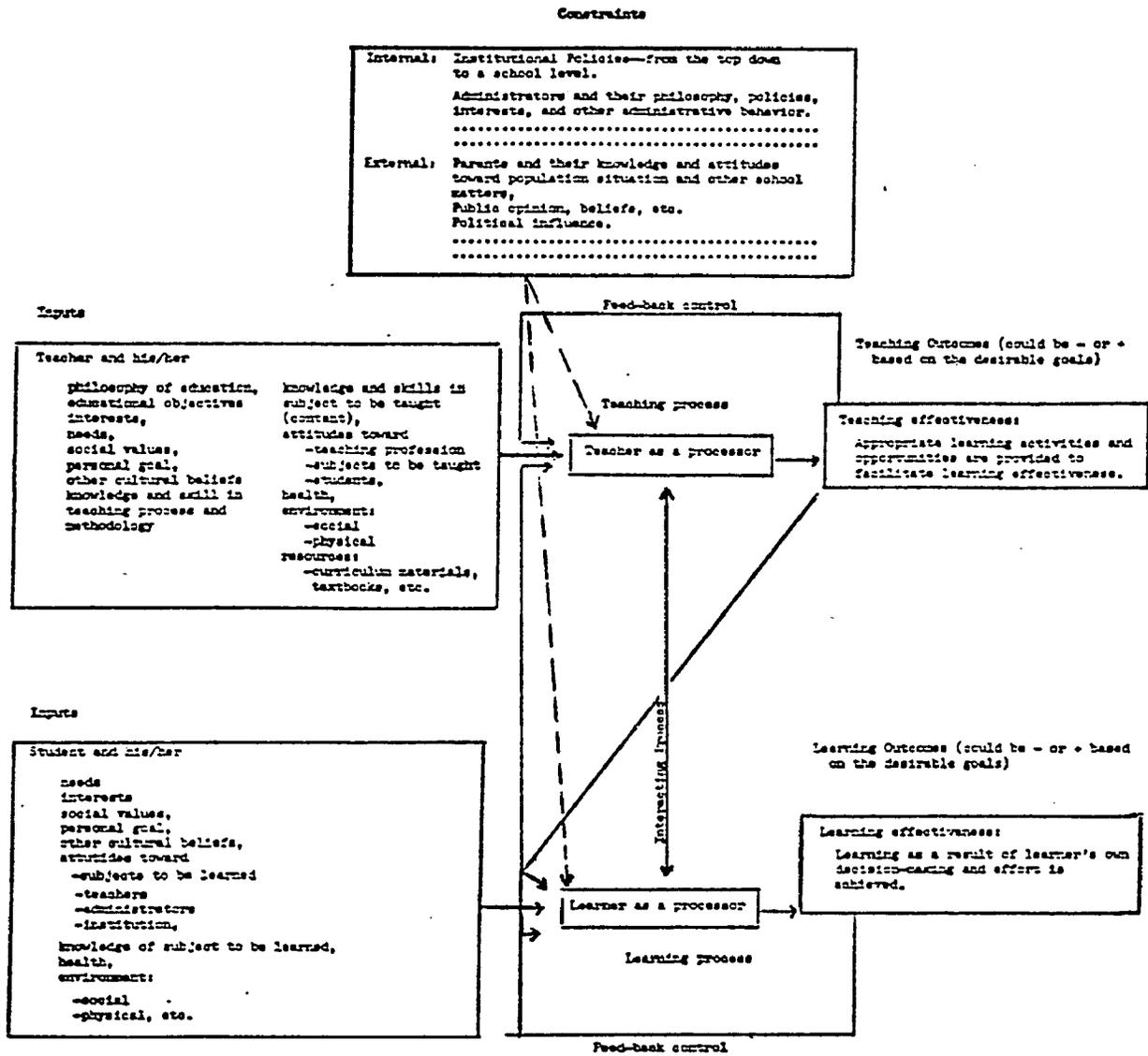
¹Also see Reference Section for Goodlad (1966b) and Lawler (1970) for the Systems Approach.

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A Systems Approach to the Planning of Population Education



Desirable Learning goals (outcomes):

1. acquire knowledge of
 - 1.1 the process and factors involved in the process of population dynamics;
 - 1.2 the effects (consequences) of population dynamics on the family, community, nation, and world.
 - 1.3 the possible known solutions to the undesirable effects of population dynamics
2. develop responsible attitudes; and to
3. take rational action toward the population situation which will ultimately lead to attainment of the quality of life one wishes for himself, his family, community, nation and the world.

Chart 7.2

g. Conclusion:

In discussing a systems approach and planning to curriculum development in Population Education, an attempt was made in the previous section to analyze the external and internal factors which play a significant role in the process, in the context of the total educational system.

As summarized by Wayland (1972), three dimensions of the innovation are crucial in curriculum development in this area: substantive aspect of the curriculum, the process of curriculum development, and the structural patterns for the incorporation of population into the curriculum. The first two dimensions have been analyzed in the previous chapters and sections in the present study. The structural patterns for the incorporation of population in the curriculum, will be discussed in the following section.

7.6. The implementation strategies:

Several alternative modes of inclusion have been adopted or suggested through various programs and projects and by experts. These have been proposed in view of the major areas of concern in Population Education expressed in the Population Bulletin (Population Reference Bureau, 1970) including: --i) the discipline oriented nature of the educational system, ii) the crowded curriculum at all levels, iii) the value and time horizon components of population related matters, and iv) the shortage of teachers, teacher educators and teaching materials. A diversified plan of

alternative approaches that have been suggested or developed, are summarized with a purpose to identify the general and special characteristics of these modes of inclusion. This presentation is based on the analysis of the approaches presented by experts and program specialists such as Massialas (1972a), Chauls (1974b), Wayland (1975 draft copy), Jayasuriya (1972), and Wadia (1971), in building these schemes. These modes have also been discussed in the NCERT reports (1969, 1972) and UNESCO workshop proceedings (1970).

7.6.1. Modes of inclusion:

(a) The 'infusion' approach:

This has been a widely advocated approach in view of the crowded curriculum. Also known as 'program infusion' approach (Massialas, 1972) or 'permeation' (UNESCO, 1970; Chauls, 1974), it seeks to supplement and strengthen the existing curriculum with regard to its treatment of population matters, in the form of brief population topics, stories, episodes or examples.

This approach does not require a major reconstruction of the curriculum, rather it builds upon or extends major topics already available in a course of studies. For example, a population episode is a brief unit of study which focuses on an important population topic and interconnects conceptually with a traditional topic in a given subject. It can include documentary, narrative, audio-visual material, pupil exercises and classroom games.

The shifting of emphases, of removing other smaller topics and introducing population concepts can be handled by each teacher and would not require higher level of curriculum decisions. The difficulty with this approach is that it is time consuming and may result in the knowledge of population "facts" in contrast to a "comprehensive view"; a very large number of teachers would need to undergo training, the entire curriculum will have to be revised.

(b) Instructional 'units' within existing subject areas:

A 'unit' may be operationally defined as a series of related concepts woven into the organization and sequence of an instructional scheme, which takes roughly from one to four weeks of the classroom time.

A unit is not necessarily directly connected with other traditional topics although it is presented within the general context of a curriculum content area, e.g., social studies, the humanities, science, etc. It focuses on fairly broad topical or issue areas, is conceptually independent and assumes no prior knowledge of the ideas and issues discussed in it. It may incorporate a wide range of materials and media, but provides for a sustained analysis and discussion period.

Population units have been planned in one or more Asian countries for each of the following subjects--biology, health, home economics, language, mathematics, science, social studies.

A modification of the 'unit-approach' is being undertaken by the Philippines PEP program. They have developed "sub-units" which differ from complete units in that they are slightly shorter (from several days to two weeks) and are designed to immediately follow and to be considered as a sub-section of an existing unit selected on the basis of its relevance to the Population Education objectives.

The preparation of teaching material is relatively simple—writing of discrete modules each with its own set of objectives, although objectives of different units must fit together to be able to lead to the achievement of overall program objectives. Each teacher will teach only population concepts which are closely related to the subject he or she already teaches. Population learning will occur at numerous times taught in different ways by different teachers, providing a variety needed to enable students to learn population concepts in their own best way, at their own best pace, providing numerous opportunities for reinforcements of previous learnings.

A general training to many teachers will be necessary. In-service training will be expensive and lower quality than in-service given to Population Education specialists. The students' exposure to Population Education will be scattered over a range of time with the possible consequence that there is little cumulativeness in those experiences.

Locating an appropriate place for some concepts and data into an established sequence in a particular course may be difficult.

(c) 'Mini-course':

Combines some of the qualities of a separate course and unit approach. A limited number of hours or class-room periods might be set aside at one or more levels. A program of studies is built as a series of instructional modules or 'mini-courses.'

There are different ways to organize, both 'units' and 'mini-courses', such as under titles such as "Population and Economic Organization", "Population and Social Structure", "Population and Political System", and others (Philippines—units in various subjects and curriculum guide for higher education).

(d) Separate Course:

This is the traditional, discipline centered approach. A separate course within a subject matter such as social studies, the humanities, sciences, has more possibility of being accepted than a multidisciplinary course drawing from social science, biology, the humanities and the natural sciences placed outside any one discipline department given the historical development of curriculum.

In a separate course, systematic and sustained attention can be given to a subject area. The content can be arranged

in terms of the internal logic of the concepts and data and the maturation level of the students. The number of teachers to be trained will be relatively small, the depth of training will be greater, the development of instructional materials is less complicated and the evaluation process is manageable.

In view of the crowded curriculum, introducing a new course usually means dropping out of a regular course. If the course is introduced at the upper level only a portion of the student population will be exposed. Offering a series of courses in sequence will require large blocks of time. Too much emphasis on population might produce negative reactions by both teachers and pupils.

(e) Portion of a new course:

Population Education content may be viewed as closely related to some other possible new areas, as a topic in courses like "Current Problems in Our Society" or some other similar frameworks. The amount of time given to population in such a course would be limited, but it would have the potential advantage of relating population directly to other matters of public concern.

Both in the case of the separate course and as portion of a new course approach, the longer the interval between the location of courses, the more likelihood of the student

forgetting and decreasing opportunities of reinforcement. Separate courses will be taught by specialized teachers, making training of teachers simpler and valuable.

(f) Major revision of an existing subject area:

For greater integration of content and with improved prospects of cumulativeness, the idea of using one existing subject area as the base, especially in social studies, and extensively revising it to remove some of the outdated and not useful aspects and introducing population content. In this case only related aspects of population will be included, but that will be balanced by integration and cumulativeness through a subject area. For the remaining aspects of population, a few instructional units could be incorporated in other subject areas. This pattern would involve training of smaller number of teachers. However, the teacher in the base subject area selected may well resist the more serious modification of their curriculum, which this would entail.

(g) Through exceptionally well trained teachers:

This is similar to the 'infusion' or 'permeation' approach, but replaces curricular changes with teacher training. This approach advocates that no change need be made in the curriculum. Instead teachers will be provided with adequate pre- and in-service training, with a background of supplementary reading, to obtain sufficient competence.

They will then be expected to integrate population into their teaching on a spontaneous basis.

If successful, this approach would probably be the most effective with highly knowledgeable and motivated teachers. Such a combination is difficult to achieve. Success depends on the quality of teacher training which will have to be extensive in population studies and teaching methodologies.

(h) The use of springboards:

Massialas (1972), suggests the use of springboards-- thought provoking materials on a topic which motivates students into conducting an inquiry on the subject. Springboards are ordinarily used in the opening phases of discussion of a topic to get the students involved and to generate relevant hypotheses or position statements. They can take many forms in a classroom--documents, magazine articles, graphs, poems, maps, cartoons, advertisements, newspaper editorials, pictures, films and so on. Statements which present opposing or incompatible positions or interpretations form excellent springboards.

(i) Special school events:

This pattern is qualitatively different from other patterns. Two styles may be identified--i) All of the activities will be outside of the regular classroom work. A special period of time would be designed for a range of activities such as special meetings of students, displays,

distribution of materials, speakers and dramatic presentations, done annually as reinforcement; ii) to provide for attention to population content in all classes during the designated but limited period of time. For example, Population Education Week, during which some attention would be given in classes in accordance with a general plan which has been devised for the school. This could be for all the schools in the area.

This needs a considerable measure of initiative and commitment on the part of the staff and teachers. This pattern could provide an educational service for out-of-school youth.

(j) Individual projects approach:

Individual study projects could be taken up by interested students. This approach is especially suited in higher education, though it could be adapted at the school level also (Lawton, 1971).

(k) Audio-visual approach: The 'TV' educational series:

This approach can be used as a supplementary aid to the approaches described above. 'TV' educational series have been prepared in the U.S. by some school systems, through a collaboration with the local television stations. These programs have been listed by Katharine Horsley in the special issue of Social Education, 1972. The Population Council library also has a collection of such projects.

1. General features of the different approaches:

Separate courses in Population Education will be multidisciplinary. The population concepts taught derive from a number of different academic disciplines and professional fields. The course must combine the findings and methodology from sociology, demography, economics, biology, anthropology and other disciplines.

Other approaches are basically single disciplinary. Population concepts are taught through subjects which most closely derive from each intellectual discipline. However, they can be introduced from multidisciplinary and interdisciplinary points of view also, which would require close cooperation among curriculum writers and later among teachers to ensure that teaching in each subject is related to teaching in other subjects. One unit may be built upon a unit which appeared earlier in the same grade in a different subject.

It should be noted that it is not necessary to select only one approach. A mix is not only legitimate, but may be preferable. For example, it may begin with permeation at primary level, followed by a unit approach later to tie together what has been learned through permeation. At the terminal stage separate courses in Population Education could be introduced.

All approaches require the addition of something new. In view of the overcrowded curriculum, even a valuable content addition may not be a welcome. Replacement for some other

content is possible and difficult. A solution to this is to locate and modify the population content already existing in the curriculum and make it more appropriate and relevant to the objectives of Population Education (Chauls, 1974).

7.6.2. Population Education through disciplinary and inter-disciplinary approaches:

While the most prevalent approach in the various action programs has been infusion through the separate disciplinary areas, interdisciplinary (Heuther, 1974) and multidisciplinary courses (Burleson, 1971; Chauls, 1974b) have also been considered. These approaches are analyzed and illustrated in the light of the past curriculum innovations.

a. Curriculum change and Population Education:

Hertzberg (1970 and 1972) examines Population Education in the light of the past and present curricular changes, relating it to the curricular reform of the sixties and the present movements, particularly in the U.S. The nature of the past was a cognitive model. The student was cast in the role of a scholar fascinated by the mode of inquiry of the disciplines and by the ways knowledge is discovered and developed, envisioning him in a middle-class suburban setting, college bound, highly verbal, future professional. This model is concerned with remedying the scholarly deficiencies of the teacher, with little interest in effect or problems of the society, primarily

deriving its leadership and support from scholars and learned societies rather than educationists.

Criticism of this model came in the 60's and curricular reform was moved toward an affective model--which emphasizes a multidisciplinary approach, geared to problem-solving or dealing with problems as such--social or personal, concerned with how the student feels, rather than how he thinks, with his present immediate environment and personal relevance, envisioning him not in a middle class but as a social reformer or a good citizen. This movement is concerned with teacher's lack of feelings for the culture of the students, deriving its leadership from the needs of the society and students. Examples of such curricula are environmental education, drug education, sex education and also Population Education.

According to Hertzberg, the present curricula should be designed for the seventies. The issue of disciplines and multidisciplinary cooperation is examined by her within this view against the continuum of curriculum innovations of the sixties.

The relevance of the disciplines to the students in the sixties was conceived to be academic. The disciplines were not seen as patterns of thought, feeling and behavior, applicable to one's everyday life or as guides in the solution of future problems of a non-academic society. This need not be so. By making disciplines relevant to the life of students, they will see the usefulness of the disciplines in discovering and

identifying new patterns and regularities in the familiar world around them.

In Population Education, the effort will have to be beyond the disciplines usually grouped together to encourage combinations such as social studies and science, ecology and literature. There is a need to think about the nature of disciplines in a new way and establish educationally valid relationships among them. In Hertzberg's view, the concept of core-curriculum which arose in the 1930's, representing a multidisciplinary affective model, one organized around a combination of disciplines and other around 'personal and social' needs of students, will be more suitable to Population Education. In this regard, a strong conceptual framework through discovering and establishing new concepts linking the disciplines will have to be developed by educators. Teacher education will have to be broad based. Referring to the problem of disciplines and the developmental readiness of the student, she emphasizes the significance of psychological readiness and needs of students, interests of teachers and commitment on the part of those who are involved in the program. Alternative curricula will have to be devised to meet the needs of the individual and society.

The following section provides selected illustrations from multidisciplinary, disciplinary and interdisciplinary approaches. Most of the experimental projects have been taken up in the U.S. In the Philippines and in India, interdisciplinary

and multidisciplinary approaches are being developed at the higher educational level, as illustrated by publications such as 'Population Education in Higher Education', Department of Education publication, the Philippines, 1974, a multidisciplinary course for college students, and the program proposed by the Population Center, S.V. University, Tirupati, India, 1974. A special mention needs to be made of another approach which is developing in some Latin American countries, such as Colombia. Javeriana University in Colombia, with the collaboration of the North Carolina University has structured its entire graduate studies program on interdisciplinary lines where population studies and Population Education programs are part of this plan (The Javeriana Project, 1972). Another variation is to have an office of the 'Dean of Interdisciplinary Studies', as is the case of the North Carolina University, which coordinates interdisciplinary activities and courses of the several departments (observation made during a visit to the University, November, 1975).

b. The Multidisciplinary Approach:

Suggestions in view of the multidisciplinary approach were put forward by several participants at the National Workshop on Population Education, under the sponsorship of the Population Reference Bureau in 1971 in the U.S. These approaches were also discussed and presented during the National Seminar on Population Education in India at S.V. University,

under the auspices of the Family Planning Association of India in 1974.

- (i) The idea of new multidisciplinary courses throughout the educational system has been strongly advocated by Burleson (1971), based on the following premises--
 - (a) Environment and population problems are sufficiently serious and urgent. There is a need for biocentric behavior, rather than homocentric behavior.
 - (b) A specifically identified educational sequence of population courses will be necessary to respond to the population variable, which otherwise gets lost in the infusion-specific-subject-approach.
 - (c) A new multidisciplinary, inquiry oriented curriculum will best serve in revitalizing education and giving relevancy to it.

Some of his suggestions include: (i) a natural science oriented course on 'Man and the Environment' with inputs from population sciences; (ii) an international social science civics course with environmental and developmental education inputs; (iii) an inner city course on urban problems; (iv) a 'suburban, high-population-growth-of-the-middle-class-responsibility' course; and (v) a 'rural (black-white-grey) economic deprivation ghetto' course.

(ii) A multidisciplinary approach to curriculum development and courses in Population Education were adopted by the Population Curriculum Project at the University of Delaware for their K-12 Population-Environment program, 1971, which is based on the premise that Population/Environment studies should include consideration of economics, politics, life styles, industry, land use, population size and distribution and aesthetic qualities. A similar premise has been adopted for a Population Education course in general education for college students in the Philippines program (Population Edn. for Higher Edn., the Philippines, 1974).

c. The Disciplinary Approach

This approach has been most appropriate for the subject oriented curricula of the educational systems. Population Education content is being introduced through various subjects under the broad disciplinary areas, such as the social sciences, biological sciences, demography, and humanities, in developing countries through the 'infusion' and 'integration' modes of inclusion. A few illustrations were selected for the present study to give a range of approaches being adopted or developed.

(i) Population through social studies:

(a) Social Education, (1972), discussed the characteristics and evolution of the 'Newer Social Studies' and its relation to population-oriented courses. It observes that 'newer' social studies are problem

oriented, concerned with controversy, social and personal decision-making, with values and choices and their consequences over time. This makes population, pollution, relationship between population, technological development and ecological issues, legitimate aspects of social studies. It further emphasizes that population, like the environment and the city is seen exclusively as a problem. Only the pathology of the phenomena is emphasized without recognizing the essential functioning of the process in society. Population is a broad phenomena and 'newer' social studies are capable of handling such a concept. Population concerns of the ecological issues have made biological science into a social science. There has been enrichment of social studies through these areas.

(b) Social science syllabus in Australian schools: Deer (1974) provides some themes which have been incorporated into new social science syllabi for Australian schools. The include: 'Cities and Society', 'The Family', and 'Rural Communities'. The aims of the syllabi include: social awareness of man and society, social analysis by using concepts and procedures of social science, skill and value problem analysis in the area of social controversy, the acquisition and use of social knowledge, social

sensitivity to the needs, view points and behavior patterns of others, social identity and the valuing of the natural and social heritage and skill in social interaction and social action.

(c) Population Education through history, civics and geography has been discussed by Massialas (1972), and has been adopted in the national programs in India and the Philippines at the school level.

(ii) Population Education through the sciences: Courses related to the 'impact of science on man and his culture' and 'world food and population problems' have been developed in Australia and Great Britain respectively.

(a) Courses related to the 'impact of science on man and his culture' for Australian schools provides an illustration orienting science to population related issues (Deer, 1974); it is based on the premise that science is involved in the problems of man's survival with regard to issues such as disease and old age, overpopulation, racial problems, misuse of resources, and, supply of resources. The aims of such a course are related to develop positive attitudes towards science with regard to scientists and their work, the limitations of science and scientists, role of science in conserving natural resources, appreciation of controlled

and wise use of natural resources, and the appreciation of the relationship between population and natural resources.

(b) 'An Introduction to the World Food and Population Problems through Science' is another illustration of a course suggested by Wigglesworth (IPPF Conf., London, 1970) for British schools, based on 'child-oriented-practical work of investigative approach' emphasizing understanding rather than memorization.

The disciplinary approach has been most suited for the school level. College and university disciplinary programs have taken note of the developments in Population Education and are initiating or proposing disciplinary programs in Population Education, as in India (National Sem. on Pop. Edn. S. V. University, 1974; and various disciplinary courses in North Carolina University--'List of Department Courses in Population', 1974).

d. The Interdisciplinary Approach:

Heuther (1973) advocates an interdisciplinary approach to population dynamics. His proposal is build on the basis of six central themes--

- a. Population Education should be very broadly defined.
- b. It goes substantially beyond the presentation of demographic data.

- c. It may be developed utilizing any one of the several underlying conceptual frameworks (one of which is presented here).
- d. Population Education involves clarification and changing of values and this task should be approached openly.
- e. One of the main goals is to institutionalize Population Education.
- f. One of the challenges is to infuse 'process education' into the approach to Population Education.

Rationale:

He observes that the presentation of a demography course on a college campus, the infusion of a heavier emphasis on Population processes into American History or discussion of natural population dynamics as part of biological ecology are perfectly valid components of Population Education, but for holistic meaning and understanding, the approach has to be different.

The interdisciplinary approach may not be suitable in some circumstances, but in others it can be developed as was done in the case of the University of Cincinnati.

Interdisciplinary approach at the University of Cincinnati at the undergraduate level:

The special features of the course are:

- (i) It is presented by a team of five faculty members, consisting of an anthropologist, a biologist, a demographer, an economist and a geographer.
- (ii) It is described as inter- rather than multi-disciplinary as it is an integrated set of presentations, (a result of an effort of three years), in contrast to a series of independent guest lectures from the several disciplines. This has involved considerable time on the part of the faculty.
- (iii) The course is presented during the academic year without prerequisites for any university junior or senior as one quarter of a year long sequence in "Man and Environment." The same course has been presented to secondary school teachers in a six-week summer institute sponsored by the National Science Foundation.
- (iv) The course is divided into three sections of approximate equal length:

Section I

Historical, cultural and current demography. Is an historical consideration of human evolution from primitive man to the present, surveying population size, distribution, migration, growth rates and accompanying cultural perspectives of these factors. Emphasizes current demographic statistics of many countries.

Section II

Determinants of how many people the earth can support; considers the relationship between population growth and ecological principles, incorporating man's impact on natural resources and the balance of major ecosystems, his capacity to increase food and energy production; the urban environmental impact on the health of man; relationship between developed and developing countries and the economic realities of these complex interactions.

Section III

Some approach to self-regulation includes current political activities associated with regulating population growth and distribution; methods of fertility control available, their advantages and disadvantages and the moral and ethical judgements associated with population control.

In the course attempt has been made to integrate faculty members who are involved and the subjects they are teaching.

The course is presented through lectures by a faculty team and outside guests. Twenty-five percent of the course is devoted to panel discussions between students and faculty and films. Each lecture has a period of dialogue and debate.

The course has proved of value to undergraduates as well as secondary school teachers, including a diversity of people teaching social sciences, general sciences, biology, health and interdisciplinary courses. For six weeks the teachers broaden their disciplinary orientation and interact on a common topic with different orientations and backgrounds. Many interlinked relationships are discovered.

A change of values and attitudes is an aspect of Population Education. For instance, environmental education also involves changes in values and attitudes toward pollution, environmental degradation and resource depletion. According to the author, if population educators are attempting to create a new population and environmental ethics, it should be carried out in an open atmosphere, where all attitudes are accepted as valid. The teacher's role is to clearly and openly present this value judgement on a topic, and then to present the material, not to indoctrinate or propagandize. A statement of personal viewpoint may help the student to examine his or her own without denying the student's right of free choice. There can be controversy on this issue.

Heuther feels that there is a need for greater emphasis on 'process education' in Population Education—including field trips for the purpose of collecting data, using the scientific method, at the same time aiding their

understanding of the components of modern demography.

Illustration of one course is provided from one of the several experimental programs underway in the U.S.

7.7. Summary:

Section II of Chapter 7 dealt with the mechanics of the process of curriculum development in Population Education in terms of the sequential steps involved, and the various dimensions and factors within a systems perspective. Population Education is a planned curricular innovation having distinct features with systems implications. The systems perspective was described as the 'Wayland Model', in recognition of the fact that Dr. Sloan Wayland has been the foremost pioneer in the field, who, through his expertise and global experience has extensively and exhaustively analyzed the concept, and has formulated the systems guidelines for curriculum development in Population Education. This justifies the due credit given to him in this study for his contributions.

Implementation strategies include the various modes of inclusion and the disciplinary and interdisciplinary approaches through a suggestive reference to illustrative curricula.

As was noted earlier, Population Education innovation has implications for other aspects of the educational system and its philosophy.

The last and concluding chapter examines the educational implication issues, especially with a focus on teacher training and higher education in Population Education.

CHAPTER 8: SUMMARY AND CONCLUSIONS

8.1. Summary

8.2. Discussion

8.2.1. Implication for teacher education

8.2.2. Role of the university department/college
of education in Population Education

8.2.3. Population Education and interdisciplinarity

8.2.4. Trends in the curricular theories and
Population Education

8.3. Conclusions

8.3.1. Validity of Population Education

8.3.2. Suggestions for further research

CHAPTER 8

SUMMARY AND CONCLUSIONS

'Population means PEOPLE not just statistics.'

FAO Curriculum Guide (1974)

8.1. Summary:

Population Education as an educational idea was examined in the preceding chapters to identify the curricular issues related to the nature, implementation and institutionalization of the concept in different national, cultural and educational settings within a global context. The literature related to the theory and practice of Population Education revealed a diversity of perceptions, rationales, definitions and evolving curricular strategies. The central concerns in this area relate to the issues of knowledge base, the unintegrated and unformulated framework of population studies for Population Education, the overlapping relationship of population concepts with other curricular areas, research deficiencies in some of the areas at the micro level and the cultural factors, lack of methodological and theoretical conceptualization for curriculum planning and development.

Programs in Population Education began in the absence of an adequate experience and a model. The lack of sophistication in the planning of the programs reflects the deficiencies in conceptual and methodological development. As is evident from the programs being developed in India, the Philippines and the U.S. there has been great diversity of approaches, conceptualizations and

reconceptualizations related to the theory and practice of Population Education in different settings.

An attempt was made in this study to analyze what Population Education is or could be and to review the broader context of the events and forces contributing in its development in order to build a theoretical frame of reference for curriculum development. An overview of events and activities for the period from 1965-1978 was traced within a global perspective to identify the historical milestones and efforts at the national and international level in its evolution and conceptualization.

In view of the specific nature of Population Education, a 'contextual paradigm' within the dimensions of the population and the educational parameters with relevance to Population Education was outlined. The nature of Population Education was examined against this backdrop in terms of its content and process, its relation to other curricular areas and to the concept of inter-disciplinarity with a purpose to identify, analyze and interpret the curriculum and pedagogical issues.

The major concern in Population Education is the lack of an integrated body of knowledge as it exists in other subject areas. The issue of the knowledge base was examined in view of the specific nature of Population Education and the factors which influence its formulation and organization, including the relation and significance of the 'folk-demography' and the cultural systems. Alternative frameworks as reflected in several developing programs

and viewpoints were described to provide a range of approaches that can be adapted to organize population and educational concepts in a coherent body of knowledge referred to as 'population studies.' The purpose was to provide the population educator and curriculum developer with some concrete ideas and guidelines that are being formalized through the efforts of the international agencies such as the UNESCO and through several programs being developed around the world with different population situations and perceptions.

Population Education programs being developed in India, the Philippines and the U.S. were examined with the intention of studying the concept in different population, cultural and educational settings to highlight the constraints, factors and approaches in different cross-cultural settings. An effort was made to identify the basic unifying themes and criteria within a holistic theoretical framework. The 'Wayland Model' was formulated to synthesize the total educational context relevant to the mechanics of curriculum development, implementation and institutionalization.

8.2. Discussion:

8.2.1. Implications for Teacher Education:

One of the major implications of Population Education implementation is in teacher education. The importance of teacher education has been emphasized and strongly recommended during the various international and national seminars. Pre-service and in-service programs are being formulated and introduced in most of the Population Education programs. Efforts in the

direction of in-service and preparing curricular and instructional materials for teacher educators and teachers include seminars, workshops and individual papers. Strategies adopted and suggested include short term seminars, workshops, summer refresher courses, discussions, lectures, films, T.V., radio, self-instructional packages and enrichment of library materials in Population Education, pilot projects, case studies and field trips.

Pre-service strategies include incorporation of Population Education in teacher education curriculum at the undergraduate and graduate level in general education as well as specialization. Research projects are recommended and are being introduced at the master's and doctoral level in education. Approaches including 'infusion', 'unit of study', and 'separate courses' are being recommended and utilized. Population Education programs being developed in India, the Philippines and the U.S. include teacher education programs. These programs reflect the nature of the educational system of the country. In the Philippines with the centralized system of education, teacher education is a major aspect of the national Population Education Program pilot project. In India a national model has been formulated within a decentralized system of education, where the implementation of the program is done at the state level. In the U.S. with a decentralized system with a semester approach, in-service has been undertaken by several private

agencies. Pre-service has not been very extensive, even though some universities such as the University of North Carolina have a 'Population and Environmental Education' center and have introduced courses in Population Education in teacher education.

8.2.2. Role of the university department/college (school) of education:

The role of the university and the department or school of education has been recognized and explored in view of the implications of Population Education in the knowledge base areas, interdisciplinarity, curriculum planning, teacher education and research. The role has to be interpreted within the context of the educational system of each country. In Asia the Ministry of Education has the responsibility for the implementation of school programs. The university role is complementary to this which may include clarification of the conceptual issues within the educational and socio-cultural context of each country, leadership role in an innovative activity. In many countries population questions are especially sensitive on account of multiethnic, multireligious composition of the peoples. An academic community that cuts across these dimensions and has intellectual rectitude behind it is in a position to work for the legitimization of Population Education as a desirable activity. Universities can conduct action research, pilot projects in curriculum and instructional materials development; formative and summative evaluation and the like

through the department of education. It can function as a center for the development of resources and training, providing extension services, acting in an advisory and consultative capacity. The University of North Carolina in the U.S. and the Sri Venkateswara University in India are developing programs on these lines.

A visit was undertaken in 1975 by the researcher to the University of North Carolina to study their Population Education activities. The special features included, development of self-instructional materials for teachers, enrichment of disciplinary areas to include Population Education aspects, and overseas programs in Asia and Latin America.

8.2.3. Population Education and interdisciplinarity:

Closely related to Population Education and the role of universities and colleges of education is the concept of interdisciplinarity, a concept which is being defined and formalized in view of present and future needs in education.¹ Some of the salient features of interdisciplinarity, its present state and future trend are closely related to the validity and institutionalization of Population Education and explication of the role of higher educational institutions in this area.

Creative changes in university education and research call increasingly for an interdisciplinary approach to teaching.

¹INTERDISCIPLINARITY: Problem of Teaching and Research in Universities, CERI, OECD, 1972.

The guiding principle is not to demolish the disciplines but to teach them in the context of their dynamic relationships with other disciplines and with the problems of the society. Teacher training and education at all levels need a stress on interdisciplinarity in content and methodology. It is being recognized that teachers will need a background in the new developing tools of research and interpretive skills. Interdisciplinary approaches, systems planning and analysis, futures techniques are part of the tools that need to be provided to teacher educators and teachers. Teaching methods and teacher training will have to be modified from the prevailing 'textbook-transmission-discipline' framework with a one-way teacher/taught relationship to growing use of audio-visual aids, the use of mass-media including new languages such as movies, T.V. and radio. The universities and institutions need to develop horizontal structures that will be interdisciplinary in nature, with a base of general education and specialized courses within this framework.

8.2.4. Trends in the curricular theories and Population

Education:

Emerging trends in curricular theories, conceptualizations, points of views and approaches as expressed in contemporary literature in education has a close bearing upon Population

Education.¹ Relevance of futures research, values education, humanistic education, systems planning, behavioral objectives, concept teaching and the like have relevance in Population Education. Concepts such as global education² which is being recognized as a significant and necessary perspective for curriculum has relevance for Population Education. It is not possible to deal with these areas extensively in the present study. The intent was to indicate the range of the implications of Population Education and its relationship with other educational areas.

8.3. Conclusions:

8.3.1. Validity of Population Education:

In view of the analysis presented in the study, it can be concluded that Population Education is a valid and relevant curriculum innovation to meet the educational needs of the rapidly changing human situations. Its form and implementation will be based on the national, political, cultural and educational settings of a country as shown in table 8.1.

¹Unruh, Glenys G. 1975. Responsive Curriculum Development, Theory and Action, McCutchan Publishing Corporation, U.S.A.

Rubin Louis, 1977. Curriculum Handbook, Administration and Theory, Allyn and Bacon, Inc., Boston, London, Sydney.

²Social Education, Jan. 1977, Vol. 41 No. 1 Special Issue on 'Global Education' Adding a New Dimension to Social Studies.

CHART 8.1

POPULATION EDUCATION IN THE PHILIPPINES, INDIA AND THE U.S.: BASIC PREMISES

THE PHILIPPINES (DEVELOPING COUNTRIES)	INDIA	THE U.S.A. (DEVELOPED)
<ol style="list-style-type: none"> 1. National Program in 'Population Education' (PEP); 2. Centralized, population, developmental, and educational policies reflecting the nature of the political system; 3. Faces problem of rapid population growth, modernization and socioeconomic development; 4. Educational goals reflect national goals related to the improvement of the quality of life. 5. Socio-cultural factors are of great significance in program planning and implementation. 6. PEP includes curriculum development, teacher training and preparation of materials. It is a national pilot project which is being tried at the school, college, and teacher education level. 7. Private organizations, universities and other institutions operate through the central governmental machinery 	<ol style="list-style-type: none"> 1. National Program in Population Education through the Population Education Cell, NCERT; 2. Decentralized system of education with centralized planning in the areas of school education and teacher training (partly centralized); 3. Population and educational policies are part of national development policies. 4. India faces the problem of rapid population growth, modernization, revitalizing education, socioeconomic development. 5. Educational goals related to meet the basic needs of the vast population of people to improve their quality of life. 6. The developmental policies are a combination of centralized and private organizations. 7. Socio-cultural factors of great significance in developing population education programs. A multiethnic, culturally diverse society with several linguistic subcultures with great implications for program development and implementation. 8. School curriculum model prepared by NCERT, is being adopted at the state levels; 9. Experts from India are providing services to other Asian countries for program development. 10. Active collaboration of private and governmental agencies and in- 	<ol style="list-style-type: none"> 1. No national population policy or program ; 2. Decentralized system of education ; 3. Educational policies based on democratic political philosophy of a highly developed literate people to meet the political, social and economic needs of a technically advanced society. 4. Faces the issues of urbanization--suburbanization, environmental pollution, consumption patterns and resources. 5. A society of immigrants built by the best of manpower and resources. Application of science and technology for improving the quality of life. 6. Private organizations and enterprise form a distinctive feature in the operation of several functions. 7. Socio-cultural, religious, ethnic factors of great significance in developing Population Education programs. 8. Population Education programs have been taken up by several private organizations, universities, school systems, mostly under the rubric of 'Population-Environmental Education.'

reflecting the nature of the political system;

3. Faces problem of rapid population growth, modernization and socioeconomic development;
4. Educational goals reflect national goals related to the improvement of the quality of life.
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with centralized planning in the areas of school education and teacher training (partly centralized);

3. Population and educational policies are part of national development policies.
4. India faces the problem of rapid population growth, modernization, revitalizing education, socioeconomic development.
5. Educational goals related to meet the basic needs of the vast population of people to improve their quality of life.
6. The developmental policies are a combination of centralized and private organizations.
7. Socio-cultural factors of great significance in developing population education programs. A multiethnic, culturally diverse society with several linguistic subcultures with great implications for program development and implementation.
8. School curriculum model prepared by NCERT, is being adopted at the state levels;
9. Experts from India are providing services to other Asian countries for program development.
10. Active collaboration of private and governmental agencies and involvement of universities through decentralized channels.
11. Out-of-school programs emphasized along with school programs.

In the developing countries the basic human needs, such as food, shelter and clothing assume the stature of priority human rights. Education is oriented towards social and developmental change.

Collaboration and exchange of expertise in personnel, curriculum materials, and funding at the international level, as part of the UNESCO programs or national programs, form the common feature of all the programs.

3. Educational policies based on democratic political philosophy of a highly developed literate people to meet the political, social and economic needs of a technically advanced society.

4. Faces the issues of urbanization--suburbanization, environmental pollution, consumption patterns and resources.
5. A society of immigrants built by the best of manpower and resources. Application of science and technology for improving the quality of life.
6. Private organizations and enterprise form a distinctive feature in the operation of several functions.
7. Socio-cultural, religious, ethnic factors of great significance in developing Population Education programs.
8. Population Education programs have been taken up by several private organizations, universities, school systems, mostly under the rubric of 'Population-Environmental Education.'

In the U. S. educational philosophy and objectives emphasize and are oriented towards the democratic political philosophy. Human rights assume significance in this light. Education is geared to meet the needs of this complex and fast changing industrialized system.

Population Education began as an amorphous, nebulous collection of concepts and generalizations which were searching for a definition, a shape, a content, a structure and a validity for being brought within the preview of formal educational systems. The short history and the embryonic nature of Population Education with simultaneous programs and activities at the international and national levels make it imperative to conduct conceptual studies to facilitate the implementation and institutionalization of this curricular innovation through the various appropriate approaches suited to different situations.

The global nature of this curricular movement has drawn specialists, researchers and educators to form a nucleus of experts at the international level who have been contributing toward the development and planning of Population Education under the auspices of UNESCO and other international agencies.

'Population Education' continues to be used for a great variety of programs related to sex education, family life education, quality of life-environment-resources-population' issues and other related areas. The contemporary emphasis is on a comprehensive, well planned, research based curricula through the approaches of 'infusion', 'special units' and/or new courses and cocurricular programs. Introducing Population Education in the formal education has implications for teacher education and the programs in higher education. This is being reflected in the teacher training and teacher education programs being developed in different countries. The institutions

of higher education, the universities and colleges of education are being drawn into this movement. University programs in Population Education are being developed in several American universities, such as the University of North Carolina, which is involved in curriculum development, teacher education, research and extension services in Population Education through the Center for Population and Environmental Education.

Sri Venkateswara University (Tirupati, Andhra Pradesh) in India is developing a Population Studies Center based on the North Carolina model. The whole area of the role of higher education in Population Education is very significant in the development of Population Education in terms of teacher training and needed research. This aspect is beyond the scope of this study. A brief reference to this has been made in the discussion section to note the efforts at the higher educational level in teacher training.

It is observed through these developments that despite several constraints Population Education is slowly finding relevance in several disciplines such as anthropology, civics, ecology, biology, economics, ethics, geography, health education, history, mathematics, home economics, demography, sociology, photography, radio, television and so on. Population Education has also been viewed as contributing to educational innovation and renovation through new integrations and approaches in curriculum contents and methodologies.

Future trends:

The process of evolution, development, conceptualization and institutionalization of Population Education will continue through several efforts at different levels--international, national and local. More and more emphasis will be given to conceptualizations for specific local situations. Examination of the concept at the theoretical level will continue to take place in the light of several other emerging educational concepts in the field of curriculum with close relevance to Population Education. These include interdisciplinarity, multidisciplinary, diverse teaching/learning methodologies and techniques, futures' concept in education, alternative modes of inclusion and implementation, organization and evolving structures of educational systems at all levels, other educational programs such as environmental education, global education, values education, humanistic education, affective education, development education, human rights and distributive justice issues and the like.

It is noted that more and more attention will be given to systematic and comprehensive planning taking into consideration the needs of people from diverse backgrounds, focusing upon necessary research activities and upon pilot projects. Methodological approaches in teaching/learning and research in the content and process of Population Education will go hand in hand as the concept takes its curricular shape. A systems

approach and analysis will be emphasized more and more formulating and planning of the formal educational programs.

The strategies of introducing Population Education will vary depending upon the population situation, educational needs of the audience and the nature of the educational system. In the industrialized countries where most of the populace is retained longer in the educational system, the formal educational programs especially at the higher educational level have a fair scope to develop. In the developing countries, where the out-of-school population is growing and the school retention rate is low, the out-of-school programs for youth and adult education, continuing education, extension education and community programs will be emphasized and strengthened along with the formal programs.

The format of the educational systems and the basis for curriculum organization will affect Population Education. Semester system or year long courses, the examination system, curriculum based on the needs of the society, needs of the individual and/or a discipline orientation, are some factors which will influence implementation of Population Education. It has been observed by several educators and experts that a traditional discipline centered educational system with a year long course format and teaching/learning which is based on traditional unidirectional methodologies will pose several constraints for Population Education. Availability and

accessibility of resources, and funding are crucial factors in the success of Population Education, including the level of technological development. In the U.S., for instance, the process of implementation is facilitated due to the availability of resources and technological development and the advancement of educational techniques. In countries such as India with an uneven development of the different regions of the country, an imported educational system model, the unavailability of resources and funding pose some of the very difficult constraints to be overcome.

The most common curricular approach in the curriculum has been integration of Population Education concepts within different subject areas. Other approaches will be adopted and adapted either singly or in combination as the concept attains clarity. Population Education may integrate itself with other curricular areas such as 'values education.' The use of the term 'Population Education' may be discontinued in some programs with such integrations. The term 'Population Education' will generally refer to school programs, while the university programs inclusive of Population Education may prefer the term 'Population Studies' at the higher educational level. In any event, the idea will remain and will be integrated into the aims and goals of education at all levels as the concept integrates and evolves into several diverse formulations.

Thus Population Education represents a very timely and relevant educational concept capable of integrating within itself and with several other educational trends and research areas being developed and advocated to meet the present and future educational needs. In this regard Population Education is a curricular area representing a 'convergence' point for the various emerging concepts and theories in education.

8.3.2. Suggestions for further research:

Population Education is a recent innovation. The content areas of Population Education indicate knowledge gaps where research is needed. There is also a need for methodological studies. As is expressed by several experts and educators in the field, research is needed in the areas of the person (pupil), the process and the product of Population Education. Many of these areas are gradually being investigated by researchers in a variety of fields, such as in several related disciplinary areas, methodological studies, cultural factors, curriculum approaches, evaluation and the like. There is a need to synthesize and interpret the research which has already been done as it relates to Population Education. Both basic and action oriented research is being emphasized. A comprehensive discussion of the vast area of potential research is not possible within the limits of this study. A suggestive list of some of the topics which can be taken up for further research is given in the following section.

Research can be taken up in the areas of:

1. Diagnostic and exploratory studies in the knowledge, attitude and practice in Population Education for different audiences in diverse situations and settings.
2. The nature of the learner, his/her 'folk-demography', 'quality of life' aspirations, 'population understandings', and 'value systems.'
3. Studies to identify socio-cultural constraints operating in population related matters.
4. Analysis of the curricular model and approaches as developed in different countries to meet local needs.
5. Studies related to the relative effectiveness of various models and approaches and methodologies.
6. The effectiveness and comparison of the traditional and problem-solving methods of teaching/learning in Population Education.
7. Study of the effectiveness of systems planning and approaches to Population Education.
8. Development of conceptual models for systems planning in Population Education.
9. Research can be taken up in various disciplines in the areas of knowledge base needs. (This is being taken up in many American universities and some universities in India and the Philippines.)

10. Studies related to the development and effectiveness of audio-visual aids and educational technology such as T.V., radio and computer in Population Education.

11. Studies related to teacher education programs and the role of higher education in Population Education.

12. Investigation of the role of informal agencies, such as the FPAI in India, PRB in the U.S. in Population Education.

13. Basic research can be taken up at the micro level life cycle events, such as implication of late and early marriage, late family, different spacing plans for children on quality of life aspects at the individual and societal level.

14. Inquiry into the relationship of demographic factors such as declining birth rates to the other variables can be taken up within a futuristic-projection framework for countries such as the U.S.

15. Studies in the area of the level of education and the fertility patterns among people in different cross-cultural settings and socio-economic development.

A few illustrations from the potential research areas are presented in concluding this study. There is a wide range of scope and potential for research in Population Education under different categories ranging from synthetic, through basic to action oriented research in the various dimensions of Population Education. It is hoped that as conceptual clarity emerges, research needs will be more and more specified, focused and

relevant to Population Education. The future of Population Education in curricular theory and practice holds great promise.

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APPENDIX

POPULATION EDUCATION CURRICULUM		TERMINAL EXAMINATION SYLLABUS		(NSP, Philippines)				
Areas	Topics	Social studies	Health	Home Econ.	Science	Math		
I. <u>DEMOGRAPHY</u>	A. <u>Source and quality of population data</u>	x						
	1. Types of data							
	a. Census							
	b. Vital Statistics							
	c. Sample survey							
	2. Quality of data							
	B. <u>Basic demographic tools</u>	x				x		
	1. Methods of measuring fertility							
	2. Methods of measuring mortality							
	3. Methods of measuring migration							
	4. Methods of measuring population growth							
	5. Methods of estimating future populations							
	6. Age structure							
C. <u>Animal and plant population dynamics</u>					x			
1. Plant populations								
2. Animal populations								
3. Implications for human population dynamics								
D. <u>Fertility</u>		x		x				
1. Fertility behavior of different groups								
2. Fertility behavior over time and space				x				
a. World								
b. Philippines								
E. <u>Mortality</u>								
1. Mortality behavior over time and space								
a. World								
b. Philippines								
2. Immediate causes of death		x						
a. World								
b. Philippines								
F. <u>Migration</u>		x						
1. Types of migration								
2. Characteristics of migrants								
3. Migration behavior over time and space								
G. <u>Population change</u>		x						
1. Demographic transition								
a. European experience								
b. Relevance to developing countries								
2. World population growth trends								
a. Prior to the 19th century								
b. The recent past								
3. Philippine population growth trends								
4. Population projections								
II. <u>DETERMINANTS</u>	A. <u>Fertility</u>	x						
	1. The desire for children			x				
	a. Motivations in wanting children							
	b. Motivations in not wanting children							
	c. Effects of actual family size on desired family size							
	2. Motivations in not wanting any child	x		x				
	3. Motivations in wanting an only child	x		x				
	4. Family size norm	x		x				
	a. How formed							
	b. How reinforced							
	c. How changed							
	5. Age at marriage	x		x				
	a. Laws regulating age at marriage							
b. Customs, traditions and beliefs that encourage early marriage								
c. Issues for and against early/late marriage								

(Cont'd)	(Cont'd, Philippines)	Normal Anatomy	Health	Home Econ.	Science	Math.
	6. Fecundity and sterility		x			
	7. Temporary voluntary abstinence		x			
	a. Definition					
	b. As means of fertility control					
	c. Socio-psychological aspects					
	8. Involuntary abstinence		x			
	a. Causes					
	b. As means of fertility control					
	9. Divorce, separation, desertion and death of spouse					
	a. Definitions					
	b. As means of fertility control					
	c. Laws, beliefs, mores and practices					
	10. Celibacy and non-marriage	x				
	11. Contraception and sterilization	x	x			
	a. Definition					
	b. Beliefs, mores, practices and laws					
	c. As means of fertility control					
	1) Different methods of contra- ception					
	2) Advantages and disadvantages					
	3) Family-planning programs					
	12. Abortion and miscarriage		x	x		
	13. Premarital and extramarital relationships	x	x		x	
	B. <u>Mortality</u>		x			
	1. Causes of death	x	x			
	2. Man's attempt to prevent/encourage death			x		
	3. Influence of fertility on mortality					
	C. <u>Migration</u>	x				
	1. Causes of migration					
	a. Push factors					
	b. Pull factors					
	D. <u>Theories explaining population change</u>	x				
	1. Malthus					
	2. Demographic transition					
III. <u>CONSE- QUENCES</u>	A. <u>Effects of rapid population growth (RPG) on economic development</u>	x				
	1. Terms (RPG, GNP, GPP per capita, Dependency ratio)					
	2. Reasons why RPG may be detrimental to economic development					
	3. Reasons why RPG may promote economic growth					
	B. <u>Effects of RPG on food production and health</u>	x	x			
	1. Effects of RPG on food production				x	
	2. Effects of reduced food production on health					
	3. Effects of family size, parity and spacing on health		x	x		
	C. <u>Effects of RPG on the educational system</u>	x		x		
	1. Disadvantageous effects					
	2. Advantageous effects					
	D. <u>Effects of RPG on other government services</u>	x				
	E. <u>Effects of RPG on physical environment and natural resources</u>	x				x
	1. RPG is one of the many factors which contribute to environmental pollution.		x			
	2. RPG accelerates the exhaustion of non-renewable resources.					
	3. RPG leads to utilization of agricultural and forest land and water areas for human habitation.					
	4. RPG is one factor in the present destruction of the eco-system.					
	5. RPG stimulates discovery, invention and utilization of new sources of energy, power and food.					
	6. RPG stimulates new ways of re-using renewable resources.					

Area	Notes	Social studies	Health	Home Econ.	Science	Math.
F.	<u>Effects of population size and RFG on political power</u>	x				
	1. Absolute size contributes/does not contribute to political power.					
	2. RFG contributes/does not contribute to political power.					
	3. Absolute population size and RFG combined may/may not contribute to political power.					
G.	<u>Sociological and sociological effects of RFG</u>	x				
	1. Derived from RFG alone					
	2. Derived from overreaching					
	3. Man's adaptability					
H.	<u>Other effects of fertility change</u>	x				
	1. On the social, educational, occupational advantages/disadvantages to children of large/small families					
	2. On the mores, customs and traditions relative to:					
	a. Sex behavior pattern in the Philippines and in other countries					
	b. Boy-girl relationships					
	c. Institution of marriage and sex behavior patterns					
I.	<u>Other effects of mortality change</u>					
	1. On health		x			
	2. On social life	x				
J.	<u>Other effects of migration</u>	x				
IV. <u>SEXUALITY</u>	A. <u>Sexual development</u>					
	1. Biological aspects					
	2. Psychological aspect					
	3. Sociological aspect					
	a. Socio-cultural factors influencing sexual development as well as sexual behavior in later life	x		x		x
	b. Problems and issues relating to sexual conduct	x		x		
	B. <u>Reproduction</u>					
	1. Non-human reproduction					x
	2. Human reproduction					x
	a. Reproductive anatomy (structure and function)					
	b. Reproductive process			x		x
	c. Hygiene of the reproductive organs			x		
	d. Disorder and diseases of the reproductive system			x		x
	C. <u>Sex behavior</u>	x		x		
	1. Over time and space	x				
V. <u>PLANNING FOR THE FUTURE</u>	A. <u>Importance of planning and decision making</u>	x		x		
	1. Why individuals should plan and make decisions and not leave the future to chance					x
	2. How individual planning affects society					
	B. <u>How to plan and make decisions</u>	x				
	1. Art of planning					
	2. Making choices on the basis of an ethical hierarchy of priorities					
	C. <u>Life situations involving planning and decision making</u>	x		x		x

VITA

Sushama Merh, eldest of the five children of the late S. Ramalaxmi Merh, and Shri Jagmohanlal Merh, a retired plant pathologist, was born on May 26, 1936 in Ahmedababad (Gujarat State), India. Brought up in a culturally rich family of writers, teachers, and artists, her educational background includes: high school, 1952, from the Canadian Mission Girls' High School, Indore, India; Bachelor of Science in Biology, 1956, Agra University, India; and Master of Science in Botany, 1958, University of Bombay, India.

From 1958 to 1972, Ms. Merh was a Lecturer in Biological Sciences at the Maharaja Sayajirao University of Baroda, India, during which she was actively involved in Curriculum Planning and Examination Reform Programs at the undergraduate level. She visited the United States in 1968 as a Fulbright delegate to attend a seminar on Student Personnel Services at the Indiana University, Bloomington, Indiana.

She was secretary of the University Women's Association (local chapter of the International Federation of University Women) from 1970-1972, and secretary of the Handicapped Students Association of the University of Baroda. She actively participated in the various cultural, educational and social programs on the radio in India. Her publications include a General Education textbook on Life Sciences for the undergraduate students; articles on women's issues in India, and the role of youth on the university campus and in the community.

In 1972 she came to the United States to undertake a doctoral program in Education at Lehigh University. During 1974-75 she was the Vice President of the India Association of the Lehigh Valley.