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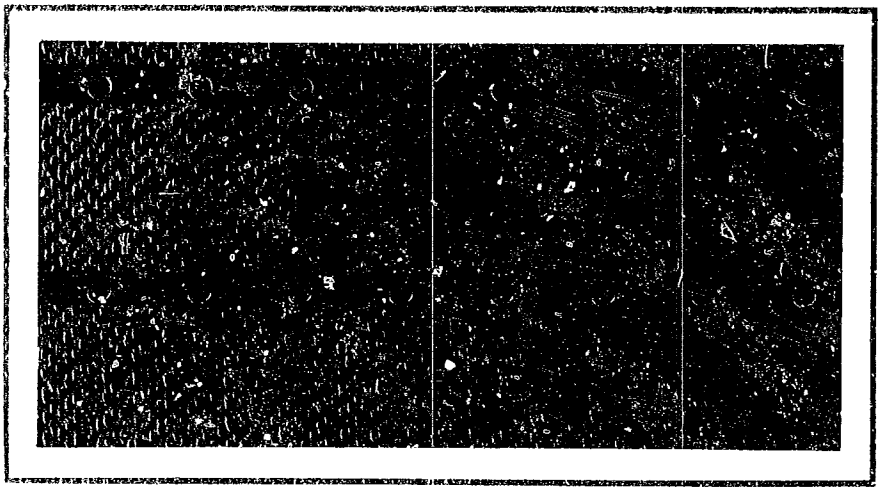

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REPORT ON THE POPULATION EDUCATION WORKSHOP IN CAIRO, EGYPT AUGUST 3-12, 1982

A Report Prepared By:

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PREFACE

This report describes the planning, leading and evaluation of a population education workshop held in Cairo, Egypt, August 3-12, 1982, and includes observations and recommendations.

Dr. Murphy and Ms. Cancellier are pleased to have been a part of the effort to make population education a reality in Egyptian schools. They wish to thank the following persons for their kindness and cooperation.

- Mrs. Zeinab Abdullah Bishrey, Undersecretary for Preparatory and Secondary Education, Ministry of Education (MOE), Egypt
- Mr. Mohammed El-Sayed Gamil, Chief, Population and Environmental Education Office, MOE
- Mr. Shaffik Atta, consultant, MOE
- Mr. Mohammed Said Mattar, Division of Education Research, MOE; translator for the workshop
- Mr. Tom Reese, AID/CAIRO
- Ms. Laura Slobey, AID/CAIRO
- Mr. Marschal Rothe, AID/CAIRO

I. INTRODUCTION

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Purpose of the Assignment

The sixth in a series of population and environmental education workshops was held in Cairo, Egypt, from August 3 to August 12, 1982. The first workshop was held in summer of 1977. The cable outlining the purposes of the workshop is reproduced below:

1. FCR NE/TECH, L. Dunston.

2. USAID has been asked by Mrs. Zeinab Abdullah El Bishrey, undersecretary for preparatory and secondary schools, Ministry of State for Education and Scientific Research, (MOE) to support another summer workshop on population and environmental education. The purpose of the workshop is to provide an orientation in the fields of population and environmental education to teachers throughout Egypt in order to prepare them to introduce modern methods and materials in these subject areas in the school system. Workshop also aims at preparing Egyptian teachers to run similar local workshops at the Governorate-level.

3. The workshop is the culmination of the Ministry of Education's past year's work on population and environmental education. Since October workshop participants have been enrolled in a correspondence course providing theoretical background in the economics and environmental impact of population growth. Participants are teachers and supervisors at the primary, secondary and normal school levels. Approximately 58 teachers will participate in this year's workshop. The workshop will be similar to those conducted in the past.

4. The MOE has requested two consultants to act as teachers and resource persons. The consultants should have a broad background of training and experience in curriculum development, teaching strategies and instructional materials design with particular knowledge of the application of these skills to population education specifically, the consultants must:

   (a) Orient participants to a basic cognitive and effective structure for population and environmental education;

   (b) Give participants an understanding of a problem solving approach to teaching population and environmental education; and

(c) Enable participants to: conceptualize learning activities; design instructional materials, and produce visual aids to use in their classrooms.

5. Consultants are requested to arrive in country one week to several days prior to start of workshop to participate in pre-workshop planning. In addition to serving as resource persons to the Alexandria workshop, the consultants will be asked to help plan the six Governorate level workshops to be held later in the year.

6. The MOE has requested Dr. Elaine Murphy of the Population Reference Bureau, Dr. Mary Turner Lane of the University of North Carolina, Dr. Sloane Wayland of Columbia University or other qualified experts. Request AID/W first contact Murphy to determine availability, followed by others as deemed appropriate and advise. Suggest services of all consultants be funded under APHA. Atherton.

Elaine Murphy, Ph.D., and Patricia Cancellier, MPH., director and assistant director of population education at the Population Reference Bureau, Washington, D.C., were again chosen for this assignment. Working with Mr. Mohammed Gamil, chief of the Population Education Unit in the Egyptian Ministry of Education, they planned a workshop similar, but not identical, to the one they had helped lead in Alexandria, Egypt, August 11-20, 1981. The interested reader is referred to the report based on that workshop, "Observations and Recommendations Related to the Summer Workshop on Population and Environmental Education," available from the American Public Health Association, Division of International Health. Findings outlined in that report--such as participants' resistance to the concept of the changing role of women as a necessity--helped to determine the focus and the selection of activities for the 1982 workshop.

Among the recommendations of the 1981 report (see Appendix A) was one suggesting that there should be a greater number of teachers among the participants; the 1981 workshop was composed almost entirely of supervisors of the various subject areas involved in population education. This recommendation was followed: about half of the 31 participants in the 1982 workshop were senior teachers. Others were administrators, subject matter supervisors, vice principals, and social workers.

One participant was a headmaster in a preparatory school; another was the vice principal of a teacher education institute for girls (graduates of secondary school in training to be elementary school teachers).

Among the disciplines represented were social sciences (including geography and civics), home economics, philosophy, psychology, science, English language, Arabic language, and commerce. One participant was a senior master in an agricultural school. (See Appendix B.)

Murphy and Cancellier were gratified to learn that five of the 31 participants were women; among them were a supervisor of science, a supervisor of social sciences, and the vice principal of a teacher education institute for girls. The other two were home economics supervisors. At the 1981 workshop, only three of the 45 participants were women--two home economics teachers and a librarian.

Demographic Background

According to the 1982 World Population Data Sheet (Population Reference Bureau), Egypt's estimated mid-1982 population was 44.8 million. Its crude birth rate was 43 and its crude death rate was 12, yielding a 3.1 percent rate of natural increase and a doubling time of 22 years. These figures are based on United Nations and World Bank estimates.

However, recent preliminary data from Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS) suggests that these figures may be too high. In a May 1982 communication from CAPMAS to USAID/CAIRO, the crude birth rate for 1980 was given as 40.9, the crude death rate was 10.4. The 1981 birth rate was estimated at 37.8 and the death rate at 10.1. The figures were based on registered events; no adjustment was made for under-registration.

If accurate, the CAPMAS figures represent an encouraging downward pull on birth rates that can at least in part be attributed to Egyptian-funded and foreign-aid funded population and family planning projects. The population officers of USAID/CAIRO also referred the consultants to the National Academy of Science's 1982 report, The Estimation of Recent Trends in Fertility and Mortality in Egypt (Report No. 9, Committee on Population and Demography, National Academy Press, Washington, D.C., 1982). This report documented a decline in the birth rate that was particularly pronounced in the urban centers of Cairo and Alexandria. "In sum," says the report, "we can see that the reduction in fertility in Egypt has been caused both by later marriage (a reduction in the effective incidence of nuptiality) and by a fall in marital fertility." (p.21)

Under Anwar Sadat, population and family planning programs were active and enjoyed the particular interest and attention of Jihan Sadat, the first lady. When Hosni Mubarak came to power after the assassination of Sadat, everyone wondered what his attitude would be toward the population programs supported by his predecessor. To the relief of those concerned about population problems in Egypt, Mubarak spoke out strongly for a reduction in the growth rate of Egypt's population at a national economic conference. He urged that priority be given to the problem posed by an annual increment of 1.3 million people. "The present rate of population increase obstructs economic development and shatters our hopes for securing a prosperous life for every Egyptian," he said. (See Appendix C.)

Progress in Population Education in Egypt

In addition to the information described in the 1981 report (reproduced in this report as Appendix D), Mr. Mohammed Gamil, chief of the Population Education Unit, provided more information in an interview with the consultants. Mr. Gamil said that population concepts are now integrated into most relevant courses at the primary, the preparatory, and the secondary school levels. It is also included to some degree in teacher training institutes. The concepts are not merely part of the syllabus but part of the textbooks in most of these courses. The most extensive coverage is in ninth-grade (basic) social sciences; there are about 50 pages on population in the geography text.

However, there are important concepts that are not covered when the totality of coverage is considered. The major stress is on the effects of rapid population growth in terms of jobs, housing, and so forth. The demographic transition, doubling times, the relationship of replacement level fertility to eventual zero population growth are not covered. Contraception and family planning are not covered.

Perhaps more importantly, the approach to population education is traditional and cognitive--students read and memorize facts for tests. There is a great need to utilize the new learner-centered teaching methods which emphasize problem analysis, problem-solving, values and attitudes.

The population education correspondence course has reached over 1,000 educators by mail, and the annual summer workshops have trained about 250 senior supervisors (both regional and at central MOE), chiefs of training departments, supervisors of disciplines, and senior teachers. While gaining the support of educational leaders at the central and governorate levels has been essential, much work remains in terms of direct teacher training. A plan to decentralize teacher training and multiply the effectiveness of those who have been trained is needed.

Population topics are now covered in the national exams--an invaluable impetus to teaching about population in the classroom. The greatest number of population questions are found in the geography and civics exams. With further planning and adequate funding, the population education project can accelerate its progress.

II. THE WORKSHOP

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Planning

Before leaving for Cairo, Dr. Murphy and Ms. Cancellier reviewed the 1981 report and their notes and recollections of the successes and shortcomings of the 1981 workshop. They decided to recommend retaining many of the workshop activities that the 1981 participants had responded to positively and that clarified important concepts. Activities which illustrated well the new teaching methods, such as role-playing, demonstrations, brainstorming, and small group projects, were also chosen.

Particular attention was paid to the results of the pre- and posttest from the 1981 workshop. On the basis of the findings, activities which emphasized the importance of the changing roles of women were chosen. Because participants did less well on the posttest describing the case study as a method of teaching, the consultants decided to give more time to description, examples, and practice of this method.

In Cairo, Dr. Murphy and Ms. Cancellier met with Mr. Mohammed El-Sayed Gamil, chief of the Population Education Unit of the Ministry of Education, Mrs. Zeinab Abdullah El Bishrey, undersecretary for preparatory and secondary schools, and Mr. Shaffik Atta, consultant, to plan the final agenda.

As in previous years, the MOE divided the field of population studies into six domains:

(1) Population concepts and their measures (including, birth, death and growth rates, doubling times, density, population composition, etc.).

(2) Factors which affect population growth (including the effects of fertility, mortality, and migration on population growth; values and tradition which affect population growth).

(3) Effects of the population problem in the world and Egypt (on the family; on the quantity and quality of food, health, and clothing; on agriculture, education, transportation, housing, and the ecosystem).

(4) The physiology of reproduction.

(5) Population policies in Egypt and elsewhere.

(6) Planning for the future.

The agenda was planned so that all six domains would be covered as the content of the workshop. In addition to lectures on various topics

by Egyptian experts, the participants would be introduced to a wide variety of nontraditional methods of teaching about population. Attitudinal as well as cognitive changes would be important goals of the workshop; the workshop would be evaluated using a pretest/posttest in terms of cognitive and attitudinal changes and in terms of understanding the new teaching methods.

Mr. Gamil identified 16 specific behavioral objectives of the workshop which would be measured through an objective test on the population education correspondence course which the participants had taken during the school year or through the pretest/posttest on attitudes and new teaching methods. (See Appendix E.)

Workshop Agenda

The final agenda reflected the above objectives in terms of content, methods, and evaluation. It also reviewed and reinforced areas covered by the correspondence course. The agenda left room for participants' analysis and discussion of how population education fits into various curricula, what obstacles must be overcome, and recommendations for action. In addition, certain leaders from the Ministry of Education, including the Deputy Minister, Mr. Mansur Hussein, were invited to give lectures. The workshop days were divided into three sessions of approximately two hours each. A half-hour break was included every day.

Tuesday, August 3

Session 1 — Opening session. Welcoming comments by:

Mr. Shaffik Atta

Mrs. Zeinab Abdullah El Bishrey

Mr. Mohammed El-Sayed Gamil

Dr. Elaine M. Murphy

Pretest on population teaching methods and values/attitudes

Reception for participants

Session 2 — Population education and its objectives (Lecture, Mr. Gamil)

Session 3 — Nontraditional methods and materials for population education (See Appendix F.) (Dr. Murphy and Ms. Cancellier)

Small-group work studying their own syllabuses for entry points for population education according to discipline

Wednesday, August 4

Session 1 — Introduction to the first domain (population concepts and their major components)

Small-group discussion

Session 2 — Quiz on world and Egyptian population trends

Discussion of answers to quiz and use of a quiz as a springboard to discussion rather than a testing method

Session 3 — Nontraditional methods of teaching the first domain (See Appendix G for description of activities)

- "Water Game," simulation illustrating natural increase and carrying capacity
- "What's a Billion?" riddle illustrating magnitude of one billion as related to size of world population
- "Calendar Riddle" and "Lily Pond" riddles illustrating exponential growth
- "World Population Growth," simulation of population growth through time
- "Two-vs-Three-Child Family," simulation/role playing illustrating the effects of different family sizes on aggregate population size over time
- "Egypt's Average Family Size," application of above activity to Egypt
- "Human Beans," simulation illustrating age structure

Thursday, August 5

Session 1 Continuing activities of the first domain

- "Calculating Egypt's Growth," personalizing statistics by dividing annual growth into months, weeks, days, and hours
- "Population Growth through History in Egypt," graphmaking
- "Population Density in Egypt," participants asked to think of ways of using local materials such as beans or peanuts to illustrate the concept
- "Constructing a Population Pyramid," using family and small-group data to construct an age-sex pyramid

Session 2 Introduction to the second domain (elements which affect population growth); discussion

Session 3 Nontraditional methods of teaching the second domain

- "Observing and Comparing," identifying factors associated with rapid and slow population growth; using data for problem-solving
- "Reason for having large or small families," brainstorming activities
- "Traditional Folk Sayings," classifying old sayings into pronatal and antinatal categories
- Responses to old sayings as a confrontation exercise

Saturday, August 7

Session 1 Lecture on curriculum development by Dr. Yousef, Khalil, former Director of Educational Research

Session 2 Continuation of second domain activities

- "The Status of Women," problem-solving activity
- "Why Do People Leave Their Villages? Can This Trend Be Reversed?" brainstorming activity
- Springboard activity on the role of husbands in family planning: Why do some husbands object? What can be done?

Session 3 Audio visual aids for population education

- "World Population," film (population growth over time)
- "For Your Pleasure," film (urbanization of a rural scene)
- "Population Education in Egypt," introduction to MOE slide/tape program

Sunday, August 8

Session 1 Content analysis of local research
(done by participants as part of their correspondence course)

Session 2 Introduction to the third domain
(effects of the population problem on the world and Egypt)

Nontraditional methods of teaching the third domain

- "Those Billions Are Individuals," values clarification
- "How Has Rapid Population Growth Affected the Environment?" brainstorming activity
- "How Has Population Growth Affected My Own Life?" role-playing/letter to an old friend

- "Food for Thought," description of role-playing activity
- "Egypt and Jobs," small-group problem-solving activity, including graphing and presentations to whole group

Session 3 "Developing Instructional Materials," an introduction by Mr. Gamil

Monday, August 9

Session 1 "Integrating Population Concepts into Curriculum"; "Designing Instructional Materials," lecture

Session 2 Continuation of nontraditional methods of teaching about population. "Scriptwriting activity," using an announcement of a new TV serial on the inequality of women, participants in small groups develop a three-minute script for an episode and then act it out

- "Before and After Rapid Population Growth," small groups draw "before and after" scenes
- "Regional Planning Board," problem-solving/ role-playing activity; participants debate and decide on population policies at the village or regional level

Session 3 Introduction to fourth (reproductive physiology), fifth (population policy), and sixth (planning the future) domains

Tuesday, August 10

Session 1 "The Population Explosion and Its Effects on the Environment," lecture by Dr. Mohammed Abu El Ela, former undersecretary for Secondary Education, director of Minister's Bureau, MOE

Session 2 "The Population Explosion and Education in Egypt,"

lecture by Mr. Mansur Hussein, deputy minister of Education

Session 3 — Objective test on correspondence course

Wednesday, August 11

Session 1 — Posttest

Continuation of methods of teaching the fifth and sixth domains

- "Take a Stand," values clarification exercise
- "City Planning," problem-solving activity

Session 2 — Introduction to developing a teaching module, using "World Population: Toward the Next Century," as a model

Session 3 — Developing an Egyptian teaching module; small-group work according to discipline

Brief remarks by Dr. Guirguis el-Rashidi, new undersecretary for Secondary Education, MOE

Thursday, August 12

Session 1 — Results of pre- and posttest given to participants

Participants' critique of the workshop and recommendations for future workshops and for the advancement of population education

Session 2 — Review of the objectives of the workshop and success in achieving them (Mr. Gamil)

Session 3 — Awards to top students and closing remarks

Evaluation of the Workshop

A. Pretest-Posttest

The pretest-posttest focused on attitudes toward population problems and population education as well as knowledge of new teaching methods for population education. The questions and pre- and posttest responses are given in Appendix H.

There were significant changes in all but three of the items:

1) "Using a variety of teaching methods is most effective for population education" (70 percent strongly agreed on pretest, 72 percent on posttest);

2) "Women must be given new opportunities for jobs and leadership" (33 percent strongly agreed on pretest; on posttest, 32 percent strongly agreed and 5 percent agreed);

3) "It is important that students today plan to have smaller families when they marry" (70 percent agreed on pretest, 71 percent on posttest).

Clearly, there was resistance to the idea that the roles of Egyptian women should be expanded, even though that is one of the strategies of Egypt's population policy. The same resistance was evident in the 1981 population education workshop, although there was a change from 42 percent in agreement with the item on women's roles before the workshop to 66 percent afterwards. Murphy and Cancellier developed additional activities and discussion questions to deal with women's roles based on perceived resistance at the 1981 workshop. These efforts appear to have had little success.

Although value-fair population education is a sound goal, it was disappointing that only 71 percent agreed after the workshop (versus 70 percent before) that "it is important that students today plan to have smaller families when they marry." Since reduction in the rate of population growth is one of the Egyptian government's goals, it obviously would be better if 100 percent of those teaching about population believed that a small average family size was desirable.

Interestingly, on the pretest, 70 percent strongly agreed with the statement: "Rapid population growth is one of the most serious problems in this country." After the workshop, 82 percent strongly agreed with the statement. Yet there was no change in regard to the desirability of smaller families. It may be that the connection between average family size and aggregate size and growth rates is not sufficiently clear to a sizable minority of the educators; or some may think that rapid population growth may be stemmed through emigration, rather than a reduction in fertility. Or it may be that for some participants reducing

rapid population growth and maintaining a rather large family size are both high values, even though they appear contradictory. Such inconsistencies of attitude (and attitude and behavior) are not uncommon in the behavioral science research literature.

Given that 30 percent of the educators began the workshop not agreeing that today's students should plan smaller families when they marry, and given the resistance to the idea of changing roles of woman, the correspondence course which workshop participants have taken for the previous school year might be revised to stress those aspects of the Egyptian population policy.

While some participants were ambivalent about family size and women's roles--before and after the workshop--there was little doubt that participants' knowledge of and attitudes toward population teaching changed dramatically. For example, before the workshop, only 50 percent agreed with the statement "I feel ready to teach about population." After the workshop, 95 percent agreed with it. Similarly, only 40 percent strongly agreed that they felt ready to help teachers teach about population before the workshop, compared with 97 percent after the workshop. Comparable changes occurred in terms of methods of teaching about population, with greater knowledge and much more positive attitudes expressed after the workshop.

As in the 1981 workshop, the case study could only be described, not practiced; it was, again, the only method which most participants could not adequately describe on the posttest. This finding suggests that the case study either be emphasized in the correspondence course or dropped as a method used in the workshop, since it does not lend itself to practice and participation as do the other methods

B. Performance in the Correspondence Course

Two days before the workshop ended, Mr. Gamil administered a written test on the material covered by the correspondence course. He also graded, returned, and discussed participants' local research projects, which were assignments of the correspondence course. Prizes were given to the students with the highest scores during the closing ceremony on the last day of the workshop.

C. Participants' Performance in the Workshop

The specific objectives of the workshop were defined in terms of the participants' abilities to master population education knowledge and skills. By the end of the workshop, participants had practiced and could demonstrate mastery of population teaching methods (such as problem-solving, brainstorming, role-playing, etc.) as well as population content (birth rates, death rates, etc.).

III. OBSERVATIONS

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Workshop participants were well prepared, having completed a correspondence course on population education during the previous school year. They came to the workshop with a fairly high knowledge of population dynamics and an appreciation of the effects of rapid population growth on various aspects of the quality of life in Egypt. This knowledge would increase during the course of the workshop.

Their greatest gains were in the mastery of and attitudes towards the new teaching methods for population education. Coming from many years in a traditional school system which emphasizes memorization of facts and examinations, the participants were surprisingly open-minded about the new techniques. From the first day, they enthusiastically engaged in small-group work, problem-solving, role-playing, values clarification exercises, and discussions.

The pretest revealed that only 75 percent agreed with the statement "Teaching about population is important" and 70 percent with the statement "Rapid population growth is one of the most serious problems in this country" (posttest: 85 percent and 82 percent, respectively). Considering that these participants had already completed the year-long correspondence course, these relatively low responses on the pretest were puzzling. It suggests the need either to select for leadership training in population education only those fully committed to it or to stress in the correspondence course the importance of reducing the population growth rate if Egypt's goals are to be reached.

The greatest needs of the project appear to be: (1) reaching the thousands of teachers who need training in the goals, knowledge base, and methods of population education; and (2) producing student and teacher material that will be ready to use in the classroom at several levels and disciplines.

A long-term plan is needed to address these needs. Some of them were incorporated in the recommendations contained in the report of the 1981 workshop. (See Appendix A.)

Of particular importance was the decision by Mr. Mansur Hussein, deputy minister of Education, to appoint a population education liaison person in each governorate; this was a request made to Mr. Hussein by the participants during the discussion which followed his lecture.

IV. RECOMMENDATIONS

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Participants' Recommendations

At the end of the workshop, participants discussed their reactions to the format and content of the workshop and made recommendations for future workshops and for the population education project in general. One participant made a copy in English of many of these recommendations:

1. Hold the workshops in Alexandria since participants will be much more enthusiastic about the workshop. (This appears to be true, since only 31 participants came to the workshop in Cairo as opposed to 45-60 in the much more pleasant environment of the Alexandria workshops.)

2. Distribute model lesson plans for nontraditional methods so that participants can utilize them in their fields of specialization. (Copies of the activities used at the workshop--translated into Arabic--were distributed; however, this request indicates the need for ready-to-use classroom materials in several disciplines at different age levels.)

3. Keep in touch with the participants to alert them to the latest techniques in population education. (A newsletter is sent to all former workshop participants.)

4. Establish population education bureaus in the governorates of Egypt. (Mr. Mansur Hussein, deputy minister of Education, agreed to have a population education liaison officer in each governorate.)

5. Encourage participants by adding points that count in their promotion and nominating some of them to graduate studies abroad.

6. Extend the period of training; make use of more experts in population education.

7. Utilize workshop participants to train others in similar workshops at the governorate level. (This is, in fact, planned for the 1982-83 school year.)

Consultant's Recommendations

The recommendations in the 1981 report (see Appendix A) remain in force as the recommendations for this report. Two of the recommendations have been addressed. A second generation of workshops is planned at the governorate level; population is covered in the national exams to a greater extent than previously thought.

Recommendation number 10 in the 1981 report advised that outside lecturers be omitted or reduced. While this recommendation is valid theoretically, the consultants could see the value in having important persons from the MOE speak at the workshops. These officials, by taking time from their busy schedules, communicate to the participants the importance of population education. The participants feel honored by their coming and encouraged. In addition, the decision to appoint population education liaison officers was made following a lecture by the deputy minister of Education, Mr. Mansur Hussein.

The consultants recommend in addition to the 1981 recommendations that:

1. A comprehensive long-term plan for materials development and teacher training should be developed.

2. These activities should concentrate on a few disciplines and levels at first, as a pilot study, and then expand.

3. Expansion should be based on evaluation of the pilot studies.

4. Emphasis should be placed on decentralizing the project, utilizing trained local leaders for second and third generation workshops and curriculum development.

5. Adequate funding and personnel should be provided.

APPENDICES

APPENDIX A

Appendix A

RECOMMENDATIONS FROM THE
1981 REPORT

1. Subject area teams should be formed, consisting of the Population Education Unit staff, the subject area liaison officer in the MOE, and a small number of subject area supervisors and teachers who have participated in the past population education correspondence course and workshops.

2. Each team should identify or develop student materials and classroom activities that fit into an ongoing course in relevant subjects, and develop teachers' guides relating specifically to these student materials and classroom activities.

3. Materials should be grounded in the appropriate theories and methods, but teachers should be given specific instructions on how to teach the lessons, and very little theory.

4. First generation workshops organized by the MOE's Population Education Unit should use a trainer-of-trainers model; the chief objective should be to prepare participants to lead several local workshops during the following years.

5. There should be separate trainer-of-trainers workshops for each discipline, rather than combining supervisors of various subject areas into one workshop.

6. The leaders of the trainer-of-trainers workshops should primarily be the curriculum development teams, described in Recommendation 2, and MOE leaders in these disciplines. Outside consultants should be called in if necessary, but workshop leaders should be those most involved in supervising and teaching about population in Egypt especially those who had participated in the previous population education workshops.

7. Workshops should use the student materials and classroom activities developed by the curriculum development teams, described in Recommendation 2, as the primary content, although some basic population teaching is common to all subject areas. Again, theory should be minimized and learning-by-doing emphasized.

8. Participants for each subject area workshop should come in teams from each governorate or school district: the supervisor, the training officer, and at least two teachers. Research has shown that motivation aroused at workshops tends to diminish if the participant works in isolation after returning to the local

school setting. Team members provide moral support and motivation in the months following the workshops.

9. At least half of the trainer-of-trainers workshop should be devoted to the preparation of workshops that the participants will lead in their local areas. This includes organizing, planning the agenda, demonstrating the activities, and using the student materials. The end product developed by each local team should be a workshop agenda that can be put into practice upon return to the local area.

10. Outside lectures on the physiology of reproduction and other subjects not directly related to the development of local workshops should be omitted or reduced as much as possible.

11. Because curriculum development and leadership and teacher training could cover several levels of primary and preparatory (basic) education and secondary education, as well as the seven relevant disciplines, the overall task is enormous. Thus, the development of student material and training for only one or two levels (courses) in each discipline is recommended. The MOE might consider reducing the number of disciplines that population topics are integrated into in order to achieve large-scale curriculum development and training more quickly in a few disciplines.

12. Local area workshops--the second generation--must be a required part of the overall population education plan. The number of teachers and students is too large to concentrate on other models. Perfection may have to be sacrificed in favor of more trained teachers. In reality, probably no subject in Egypt or elsewhere is perfectly conceptualized or taught. It may be better for classroom students to become aware of Egypt's population problems and the need for smaller families at an inappropriate place in the syllabus than not be exposed to these topics at all.

13. The MOE should support the second generation of workshops with funding and leadership. Follow-up, such as the bulletin for workshop participants, should be continued.

14. The high priority of population education must be reflected in national student examinations.

15. Special attention should be given to development of student materials, classroom activities, and teacher training on topics that appear to be obstacles to Egypt's achievement of its population policy, for example, attitudes toward the changing roles

of women, male involvement in family planning, and religious or traditional barriers to family planning.

16. An effort should be made to overcome taboos about sex education. The teaching of reproductive physiology should include reasons for having smaller families, contraceptive methods, and Egypt's population policy.

17. Sufficient funding should be made available to support the plans outlined above, if they are acceptable to the Ministry of Education.

APPENDIX B

Appendix B

PARTICIPANTS AT THE 1982 WORKSHOP

	Name	Specialization	Locality
1.	Abu-Bakr Ibrahim Nofal	Inspector/Social Science	Gharbia
2.	Samira Benjamin Takla	Home Economics	Sohaj
3.	Laila Guirguis Saleeb	Philosophy/Psychology	North Cairo
4.	Amal Hassan Farghal	Inspector/Science	Middle Cairo
5.	Hamdy Abdel-Hameed	Inspector/Philosophy	Mansouna
6.	Nabil Kaisar Gad	English Language	Assrint
7.	Ahmed Sharnanby Abdel-Motaleb	Social Science	Damanhour
8.	Hussein Metwally Mousselly	Commerce	Damanhour
9.	Ragab Aly Abdel-Kareen	Social Science	Beheira
10.	Shaker Ahmad El-Toukhy	Social Science	Tanta
11.	Fahmy Aly Omer	Social Science	Mehalla-El-Kobra
12.	Hamed Mahoud M-El-Nagger	Social Science	Kom Hamada/ Beheira
13.	Yousef Awad	Educational Director	Minia
14.	Ibrahim Abdel-Khalek Abmad	Social Science	Quesna
15.	Ahmad Abdou Mansour	Geography	Dakahlia
16.	Assaad Shawky Assaad	Philosophy	Mansouna
17.	El-Sayed Abdallah Hassan	Senior Master/ Agricultural School	Beyala/Kafr el-Sheikh
18.	Mohamed Farrag Hussein	Arabic/Preparatory School Headmaster	Abou Shousha

19.	Mahmoud Abdallah Khalifa	Senior Master/ Social Science	Minia
20.	Adly El-Komos Shenouda	Senior Master/ Social Science	Tanta
21.	Fouad Anees Mikhail	Senior Master/ Social Science	Tanta
22.	Farauk Abdel Latif Ghanem	Vice-Principal/Teacher Education Institute for Girls	Tanta
23.	Samy Kelada Tadros	Inspector/Social Science	Alexandria
24.	Falthy Tohamy Abdel-Aal	Social Science	Asswan
25.	Fadel Abdel-Kareem	Vice-Principal/Secondary School	Sohaj
26.	Awatef Omar Ibrahim	Home Economics	Heliopolis
27.	Aly Hassan El-Sharkawy	Educational Planning and Follow-Up	Zefta-Gharbia
28.	Victor Milad Farahat	Social Worker	East Cairo
29.	Maged Abdel Mota'al	Social Worker	Alexandria
30.	Saadeya Mohamed Hamza	Social Worker	Menoufia
31.	Abdel-Mageed Abdel Rahman Gaber Barahat	Arabic Language Specialist/ Training Department	Cairo

APPENDIX C

Appendix C

EGYPTIAN GAZETTE ARTICLE REPORTING PRESIDENT
MUBARAK'S ATTITUDE TOWARD POPULATION PROBLEMS

The following is an article which appeared in The Egyptian Gazette on February 14, 1982:

President Opens Economic Conference
DEVELOPMENT RATES MUST
MATCH POPULATION GROWTH

"To consolidate our national economy on sound bases comes no doubt on top of national responsibilities because the power of Egypt should be based on a strong and sound economy," said President Hosni Mubarak in a speech opening the three-day national economic conference arranged at the headquarters of the Central General Mobilization and Statistics Agency in the eastern Cairo suburb of Medinet Nasr.

"We should all work for the welfare of society as a whole," President Mubarak told the gathering of Egypt's top economic experts and senior goverment officials. "It is our duty," the President said, "to provide for all those who serve this nation a decent and free life so that they all can feel that both their present and their future are secured and that they can view the future with confidence and optimism."

The President told the nation's leading economists that the national interest demands practical steps to boost production and ameliorate the standard of living of the masses.

In a terse but significant 15-minute speech, President Mubarak underlined the need for studying the real economic situation with all its positive and negative aspects.

The President dealt with the problem of overpopulation and said that if Egypt's population continued to grow at its present high level it could wreck the country's chances for economic recovery. President Mubarak also urged that priority be given to the problem posed by a 1.3-million annual population growth rate.

"The present rate of population increase obstructs economic development and shatters our hopes for securing a prosperous life for every Egyptian," he said.

Mr. Mubarak said Egypt's population, estimated that month at 44

million, would reach 70 million by the year 2000 and double in the following 25 years.

This would cripple any effort to provide sufficient food, employment, health, education and other services for all Egyptians, the 53-year old leader added.

The three-day conference of some 30 politicians and economic experts is likely to set the trends for the country's economy in the post-Sadat era. Its recommendations will be debated by the people's Assembly (parliament) before the government financial programme is drawn up for the 1982-83 budget.

Mr. Mubarak said he expected the conference to provide practical alternatives, solutions and plans which can be applied and not mere studies far from realities.

We must not overlook the fact that sound economic development should not only aim at increasing gross national product (GNP) but also raise the living standard of everybody.

"Consolidating the country's economy is the responsibility of every Egyptian," he told the conference, adding that increasing production, rationalizing consumption, and curbing extravagance were the pillars of a strong economy.

The conference is not also the end of the line, but rather a chain in a series of intensified research, the president said, adding that it is unreasonable that the conference comes out three days later with a plan and recommendations.

He underlined the significance of objectivity in the work of the conference and expressed hope that discussions will extend to the coming weeks to cover other points not tackled in the conference.

He called on all people to contribute their efforts to promote economy through rationalizing consumption, fighting prodigal spending, and applying social justice. He also warned against the population explosion trend which hinders economic progress and brings further burdens to the economy.

President Mubarak said Egyptians were ready to make sacrifices to help set the economy back on course.

"Our people are ready to shoulder the burdens of economic developments as long as there is serious and hard work to achieve this aim," he said.

The President underlined the importance of economic prosperity as a

fundamental factor for political stability and urged the conference to tackle Egypt's chronic housing problem, saying the present rate of population increase required the building of 15 million housing units in the next 25 years.

Reuter, MEN, GSS.

APPENDIX D

Appendix D

DESCRIPTION OF EGYPT'S POPULATION EDUCATION PROJECT FROM 1981 REPORT

Against this demographic background, the Government of Egypt launched ambitious programs for population, family planning, and development, which are coordinated by the Population and Family Planning Board (PFPB). Many international agencies, such as the U.S. Agency for International Development (USAID), the United Nations Fund for Population Activities (UNFPA), the United States Education, Scientific, and Cultural Organization (UNESCO), and the World Bank have contributed to the funding and planning of these programs. All the government ministries have also been enlisted to cooperate in population and development efforts.

The Ministry of Education (MOE) introduced population education into the national school system in 1974, defining it as "the process of developing awareness and understanding of population situations as well as developing rational attitudes and behavior towards these situations for the attainment of a better quality of life for the individual, the family, the community, the nation, and the world.

The small Population Education Unit that was established in the MOE has two full-time professionals. Recently, persons from the subject matter specialties (math, science, etc.), who are designated liaison officers, analyzed how population relates to their particular subject and made recommendations regarding curriculum revision; however, they are not part of the unit.

The staff of the Population Education Unit works directly under the supervision of the undersecretary for preparatory and secondary education. They have done a great deal of careful work, including:

- Identification of major categories or approaches to the study of population issues, such as population processes (birth and death rates) and their measurement, factors that affect population growth, and the effect of rapid population growth on the quality of life.

- Examination of the curricula of various disciplines and determination of where and at what level the appropriate population concepts and lessons can be integrated.

- Initial curriculum development in population education, geography and civics, Arabic language mathematics, science, philosophy, and home economics at the primary, preparatory (junior high), and secondary levels. Primary

and preparatory education will soon be combined into one level, called basic education.

- Identification of the best teaching methods to obtain attitudinal change in students, as well as cognitive gains. The school system is traditional and relies largely on lectures, tests, memorization, and examinations (see Appendix B). The decision to introduce new, nontraditional teaching methods, in addition to the new subject matter, is itself bold and commendable.

- Preparation of 23 booklets for teachers and supervisors on population education, ranging from its major concepts, to new methods, to evaluation.

- Organization of two-week summer training courses for supervisors and teachers beginning in 1977 and several smaller workshops and seminars.

- Establishment of a correspondence course on population education which has reached hundreds of educators. Participants in the summer workshops are drawn from this group.

- Distribution of a quarterly population education bulletin to former workshop participants and enrollees in the correspondence course.

The Population Education Unit staff have studied population education systematically through examination of the literature, course work abroad, a UNESCO-sponsored study tour of major population education programs, and work with the foreign consultants who were co-leaders of the summer workshops. The result is a thoughtful, well-organized conceptualization of the field and how it might be introduced into various subject areas and levels in Egyptian schools.

APPENDIX E

Appendix E

SPECIFIC OBJECTIVES OF THE WORKSHOP

Participants, after ten days of study, will be able to:

1. Define the effects of the population explosion on education.
2. Define the features of the policy for population and family planning in Egypt.
3. Mention some steps which the Ministry of Education has achieved in the field of population education.
4. Define the role of the Ministry of Education in solving the population problem in Egypt.
5. Write the Egyptian population education definition.
6. Mention the domains of population education in Egypt.
7. Define these domains in our existing curriculum--where do they fit in?
8. Write some details about the physiology of reproduction in men and women.
9. Practice some method of teaching population education, such as small group discussion, springboards, role-playing, etc.
10. Integrate population concepts into different disciplines.
11. Write specific objectives for their lessons.
12. Practice values clarification as a nontraditional method of teaching population education.
13. Practice problem-solving as a method of teaching population.
14. Practice and prepare teaching aids for population education.
15. Show the scientific method for preparing practical research about population growth.
16. Demonstrate the relationship of population growth to economic and social development.

APPENDIX F

Appendix F

NONTRADITIONAL APPROACHES TO TEACHING ABOUT POPULATION

A lecture is a fast way to transfer a large quantity of information. It can be very effective, but it is often overused. Students and listeners find it difficult to concentrate on, understand, and respond to an excess of information in a brief time. It is more effective to use a variety of methods to help students learn, care about, and remember an important topic. Research shows that student involvement is the most successful approach to learning.

Teaching methods may include the following:

1. Small-group work

Divide the class into several groups of five or six students. Assign them a task such as discussing an idea, "brainstorming," creating a product such as a poster, a script, or collage, or solving problems. A group representative will report results to the group. This approach engenders interest and teaches cooperation.

2. Brainstorming

In small groups or with the whole class, ask students to call out ideas in response to a question, such as "What are some ways to solve the population problem?" There are no rules in brainstorming. "Good" ideas, "bad" ideas, and "impractical" ideas are all acceptable for the time being. The objective is to involve all students in thinking about the problem without judging their ideas.

3. Problem-solving

This is a more formal activity than brainstorming and does involve judging the worth of ideas. The steps involved are: (1) identifying the problem ("Is this village growing too rapidly?"); (2) gathering, tabulating, and displaying the data (for example, in a chart or table); (3) presenting the data to the group; (4) summarizing consequences of the trends suggested by the data; (5) drawing conclusions; and (6) developing solutions. The last step should begin by brainstorming, then eliminating unethical, unworkable, unpolitical, and overly expensive (etc.) solutions.

Consider the remaining solutions and test them, if possible, by gathering further information. Finally, develop a plan for implementing the most practical solutions.

4. Graphing and making tables and charts

It is important that students learn how to understand graphs and tables. A good way to help students is to ask them to make graphs, tables, and charts. Supply them with paper that has the scale of measurements of the graph to be constructed. Or give them a table that is only partly filled in. Then give them the data to be graphed or added to the table and have students complete the work.

5. Quiz

A quiz is a small test which is not used to grade the student when it is used as a teaching tool. Its purpose is to ask the students questions about a new topic so that he or she will be interested in the answers. It can replace a lecture. Make sure the quiz contains one or two easy questions so that students feel confident that they can master the new topic (for example, "True or False? Our population is growing.")

6. Student-developed quiz

Atter students have learned an important part of the subject matter, divide them into small groups. Ask them to produce a brief quiz--about five questions--on the new topic. Then have the groups exchange quizzes among each other and answer the quiz given to them. Return the completed quiz to the group who wrote it originally for scoring. A representative from each group can then read the questions, give the right answer, and tell which question the other group missed.

7. Using local resources

Teachers do not have to rely on expensive materials and equipment to do population education. Ask students to make a scrapbook of newspaper articles, photographs, and advertisements that are related in some way to population growth, possibly as a cause or effect. A newspaper itself can be folded to make the book. When the book is finished, ask students to write a brief essay about the evidence of the effects of population growth they have collected or to describe their book to the

whole class or the small group. A diary of their own observations of population and environmental problems could also be kept in this "book."

Using people in the community as resources is also a good way to bring the real world into the classroom. Teachers might invite a nurse from the family planning clinic or a person in charge of schools, health, or transportation to discuss local population and environmental problems. Have students prepare two or three questions to ask the visitor.

8. Springboard

An idea can be a "springboard" or a bridge to a new classroom activity. For example, a newspaper article about a traffic accident can lead to a discussion of crowding and congestion, pollution, and urban problems which follow rapid population growth.

9. Case study

Students can continue using their local environments as a resource by doing a case study. A case study focuses on one situation but illustrates a trend or a category of problems. For example, a student may investigate air pollution from a certain factory. In so doing, he or she will also learn something about environmental health, environmental planning or the lack of it, pollution control or the lack of it, and the dilemma of choosing jobs over clean air.

10. Research report

Students who have access to libraries and documents should be encouraged to do a research report on a specific aspect of population, such as "Population Growth in Egypt and Its Effect on the Food Supply." The students should obtain figures on population growth for a certain interval of years and the corresponding figures for food production, imports and exports of agricultural products, etc.

11. Classroom questionnaires and interviews

Students can develop questionnaires or opinion surveys to use with other students. For example, an individual or a small group could develop a set of questions, such as: What profession do you wish to have? Do you plan to marry? If so, at what age? Do you plan to have children?

How many? Do you plan to stay where you live now or to move? Students should interview approximately 10 classmates and then tabulate their data. When all tabulation is completed, the results can be listed on the blackboard and the average number of children desired, the average age at marriage, etc., can be calculated and discussed.

12. Interviewing outside the class

Students can follow the procedures for classroom development of questionnaires and interviews but can interview people in the community and their relatives and friends. The teacher must be careful that the questions are not too personal or impolite. Results can be tabulated and discussed.

13. Values classification

There are many customs, practices, laws, traditions, and policies which favor or encourage large families either deliberately or not deliberately. But things are changing in some places. Ask students to list these laws or practices which either encourage or discourage childbearing and then to classify them. For example, parents may encourage their married sons and daughters to have children because they want to be grandparents. Or the cost of an apartment in the city makes having children very expensive.

14. Values clarification

While cognitive gains are important (understanding how populations change, the momentum of growth and age structure, etc.), it is equally important to understand values and attitudes. Certain activities can help students examine their own attitudes. For example, the teacher can distribute a series of statements about population or environmental issues. The student may respond by indicating his level of agreement or disagreement with the statements, using "strongly agree," "agree," "undecided," "disagree," and "strongly disagree." Examples of statements are: "I would like to have many children." "I think the government should reward people for having small families." "People should have as many children as they can afford."

15. Confrontation--acting out or through writing

Values in society often are in conflict with each other, especially during times of change. Attitudes toward population growth, migration, and environmental issues may vary widely. Ask a student to state his or her position on a population or environmental issue. Ask another student to challenge this position. The first student must defend his or her position. The same confrontation of values or attitudes can be done as a writing exercise if students are given a series of statements they must challenge, such as "Population growth is good for the economy," or "A man must have many children to be a man."

16. Creative use of the blackboard

The blackboard is another inexpensive resource. It can be used for brainstorming, problem-solving, or values statements which students must challenge. It can be used for map making by a small group, showing sewage, water and air pollution, transportation problems, and other environmental consequences of rapid population growth. Teachers can write "strongly agree" on one end of the blackboard and "strongly disagree" on the other end. They can then read a series of statements about population and environmental issues (see "values clarification"). Students will stand at one end or the other, according to their agreement or disagreement with the subject.

The blackboard can be used for tabulating data, making population pyramids, graphs, and charts. It can also be used for drawing pictures of people working or talking--stick figures will do. Ask students to make up a conversation or story about these figures having to do with population or environment or family size issues.

17. Picture interpretation

Using posters or photographs relating to population issues, ask students to interpret the situation shown, as with the stick figures on the blackboard. These posters or photographs can be "springboards" to a good discussion about family size or the environmental effects of population growth or can be the inspiration for an essay.

18. Creative expression

It is important to learn popu'ation dynamics and to clarify values. It is also important to express feelings about this complex topic. Students can express their feelings through short stories (students like to write about the future and population through science fiction), poems, songs, collages, drawings, paintings, and displays. They can create games, puzzles, and riddles. They can create a script for a situation and dramatize it before the class. They can write essays about their feelings, their plans, or their opinions. Ask students to imagine that they are grown up and married. They have just had a daughter, their first child. Ask them to write a letter to their baby daughter describing their hopes and dreams for the child when she is grown up. Later discuss these hopes and whether they represent a change from the role of most women. Will family planning be important in realizing these hopes?

19. Role-playing

In this method, students assume roles--a father, a mother, a bride, a groom, children in a large family, members of a decision-making council, etc. They then act out a scene or solve problems according to the way the person they represent would act. For example, four students are asked to represent members of the local family planning council. Their task is to develop recommendations to encourage parents to plan smaller families.

20. Simulations

In a simulation, objects or people represent or simulate other things or people. For example, a fishbowl can represent the earth and a cup of water poured into it can represent births while half a cup of water taken out can represent deaths. Or three different colored beans in a clear cylinder can represent the population of a country divided into those under 15 years of age, those between 15 and 64 years of age, and those over 64. These can be used as demonstrations by the teacher or as a "learning-by-doing" activity by small groups or individuals.

21. Demonstrations

A student, groups of students, or a teacher can demonstrate a concept or process in front of the class. It can be a simulation, such as

dividing a loaf of bread which represents protein among two or three groups of students, each of which represents a family with varying numbers of children. The carrying capacity of a fishbowl can be demonstrated directly with two fishbowls. One fishbowl is overcrowded and the oxygen and food supplies have been depleted, causing the fish to die. The other demonstrates a healthy environment in which the fish population, food and oxygen supplies, and waste disposal are in balance.

22. Inquiry approach

The inquiry approach refers to a style of teaching which does not tell the students to memorize facts or lists of causes. It asks students to inquire into the nature or causes of a situation and to draw conclusions from their own investigations and research. It is the approach used in problemsolving, brainstorming, group discussions, and other activities in which teachers encourage students to ask questions rather than giving them answers to learn.

23. Active use of films

Before showing a film (or slide program) ask students to look for the main points or message of the film while they are watching it. Ask students to analyze the ways in which the filmmaker got the points across and whether the film was accurate and objective. Afterwards discuss these questions and why the film was successful or unsuccessful and how it might be better.

APPENDIX G

Appendix G

SELECTED POPULATION EDUCATION ACTIVITIES
USED IN WORKSHOP

Quiz on World and Egyptian Population Trends

1. What is the population of the world today?

   a) 900 million; b) 2.2 billion; c) 4.5 billion; d) 7.4 billion;
   e) 22 billion

2. How fast is the population of the world growing each year?

   a) .06 percent; b) 1.7 percent; c) 5 percent; d) 10 percent;
   e) 25 percent

3. If the world population continues at its present rate of growth, how long will it take to double?

   a) 10 years or less; b) approximately 20 years; c) approximately 41 years;
   d) approximately 96 years; e) approximately 140 years

4. T or F: There is a population explosion in the world today.

5. T or F: There is a population crisis in the world today.

6. Which has NOT been a major cause of the population explosion?

   a) an increase in birth rates; b) modern preventive medicine;
   c) improved sanitation; d) lower infant mortality;
   e) longer life expectancy

7. What is the population of Egypt today?

   a) 2.5 millior; b) 4.3 million; c) 43.5 million; d) 450 million

8. At what rate is Egypt's population growing?

   a) .03 percent; b) 3 percent; c) 30 percent; d) 300 percent

9. If Egypt continues to grow at the current rate, what will its population be in the year 2000?

   a) 4.5 million; b) 45 million; c) 65.4 million; d) 654 million

10. How many children does the average Egyptian woman have?

    a) 1.5; b) 3.5; c) 5.3; d) 7.3

The Stork and Grim Reaper
(The Water Game)

Props:

World Population Data Sheet of the Population Reference Bureau* (found in teacher's kit; put up extra copy near demonstration so you can refer students to it)
Clear container (plastic box, aquarium, or similar; should be at least 1-quart capacity)
Old towel (place under clear container to absorb drips)
Two sheets of paper labeled: "Stork" and "Grim Reaper"
Straight pins to attach labels to wearer
Bucket of water (the "Great Beyond")
Food color (add to water in bucket for easier visibility)
Two measuring cups or dippers: 1 large (perhaps 2-cup) and 1 small (1-cup)

Script:

I'd like to show you an interesting way to convey the concept of the Earth's carrying capacity and to illustrate the effect on that carrying capacity of a birth rate that is larger than the death rate.

This exercise is called "The Stork and the Grim Reaper." Today, we shall have people come into our world via the Stork, and, of course, depart it via the Grim Reaper.

I'll need two volunteers from the audience: one to be the Stork, representing birth rates, and one to be the Grim Reaper, representing death rates. (If no one volunteers, immediately pick two students; pin appropriate sign on each.)

(Hold up clear container.) Now, you may think this is just a (plastic, glass) container, but actually it represents the world. (Suggestion: you could also have it represent a city or country at any point in history).

The water in this bucket (point to or hold up) represents people. I have added a little food color so that it shows up more clearly.

We are going to ask our Stork to add people--that is, to add water--to our globe and then ask the Grim Reaper to take people out of our globe by dipping water out of the container.

Now, students, we need to help our Stork and Grim Reaper by giving them some information. Let's turn to the World Population Data Sheet on the wall (or to their individual copies, if applicable). What is the

birth rate of the world? (Answer: 29 per 1,000)* And what is the death rate of the world? (Answer: 12 per 1,000).*

The birth rate is more than twice as high as the death rate, so we'll give our large dipper to the Stork, and the small dipper to the Grim Reaper. So, would each of you start doing your task--Stork, adding water, and Grim Reaper, removing water--and continue to do so until I say "stop." (Let them proceed until the water level gets dangerously high). Students, what is happening to the water level? (Answer: it's rising). What will happen if there is no change in birth or death rates? (Answer: water will overflow.) (Depending on the age level of your students, you may decide not to carry this example to its grim implication: that losing water really means losing people, as the Earth's carrying capacity is exceeded

What does this suggest about the carrying capacity of the Earth? (Answer: it has limits; if the birth rate isn't slowed, a crisis could result. It's important to note trends while there is still time for thoughtful analysis and humane problem-solving.)

Thank you very much, Stork and Grim Reaper. (Help them unpin their signs before returning to seats.)

Variations:

There are several variations of this exercise. Maybe you would like to show the different growth rates of two countries--for instance, a developing country with a higher growth rate and a developed country with a lower growth rate. Again, you could get this information from the World Population Data Sheet.

To do this, you could use two containers--each representing one of the countries--with a Stork and Grim Reaper for each. Both sets of people would have to work at about the same speed, with the differential growth rates shown by variations in sizes of dippers. The more slowly-growing country, of course, would have a more slowly-rising water level.

Perhaps you would like to show in-migration and out-migration for the U.S. You could use a thimble for out-migration, a 1-cup dipper for the birth rate, a ½-cup dipper for the death rate, and a ½-cup dipper for in-migration.

In another variation, the teacher or students can call out the name of a country or continent, perhaps at a certain date in history, and the Stork and Grim Reaper can adjust their speed (and/or the size of their dippers?) to correspond to the birth and death rates of that particular time and place. (Example: in Europe, during the Black Plague, the Grim Reaper would be very busy!)

---

* From 1978 World Population Data Sheet.

Population Activities

What Is A Billion?

World population in 1980 is over four billion people. Is that a little or a lot? This exercise will help you appreciate how much one billion is. Because we are really talking about people and not dollars, it may help to consider the needs and hopes of human beings as well as the impact on society and the environment of four billion people.

Your rich uncle has just died and left you $1 billion. But if you accept the money you must count it for eight hours a day at the rate of $1 per second. When you are finished counting, the $1 billion is yours and then you may start to spend it.

a. Do you accept your uncle's offer? _____

b. Why or why not? _____

_____

c. How many years will it take to count the money? _____

Work space:

These activities were taken from the Population Education Resources kit, produced by Zero Population Growth (1346 Connecticut Ave., N.W., Washington, D.C., 20036, $4).

CALENDAR RIDDLE

At the 1979 rate of growth, about 1.7 percent, world population will double approximately every 41 years. Doubling a small number over and over soon means we are doubling ever larger numbers. 1979's 4.4 billion will double to 8.8 billion in the year 2020 if current growth patterns continue. This riddle helps to illustrate the concept of exponential growth (an increase at a constant rate per year or other unit of time) and its implications for problemsolving in the future.

A father complained that his son's allowance of $5 per week was too much. The son replied, "Okay, Dad. How about this? You give me a penny for the first day of the month, 2¢ for the next, 4¢ for the next, 8¢ for the next, and so on for every day of the month." The father, thinking he had a foolish son, readily consented.

Which, indeed, was the more clever? (See reverse side of page.)

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

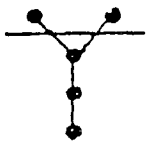
G-7

The One- Versus Two-Child Family
(or Two- Vs. Three-Child)

Props:

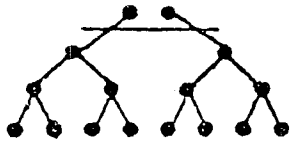
None; only people are needed. To figure out the number of generations you can depict, given the number of people in your audience, refer to the attached diagram. It's okay if the number in the audience doesn't compose a complete set of three (or more) generations. If you have a small number in the audience (12-21), One- Versus Two-Child Family could easily be done. Two- Vs. Three-Child Family requires a total of 57 people to show parents plus three generations. See below for One Vs. Two:

Couple A



Total: 5 people for parents plus 3 generations

Couple B



Total: 16 people for parents plus 3 generations

Script: (For One Versus Two)

The activity I'd like to show you next is called the "One- Versus Two-Child Family."

The purpose of this game is to show the importance of average family size and its impact on population size over time. (Point out that many different arithmetic combinations of family size can result in a two-child average. For example, some couples may have three or four children; others none. This exercise is simple in that it does not consider death, immigration, or the existence of spouses. Still, it manages to make a point."

For this demonstration, I'd like all of you to stand up and move with me to the back of the room, where we have some open space.

First, we need to designate Couple A and Couple B. Any volunteers? (If none, quickly choose four students.) You must think of yourselves as grandparents, because we've more generations about to be added.

Let's say that each of our two couples is having a family reunion and they want to see if they have room at their table for a family dinner. So we have to help to see if they have enough space by helping them count up their respective families.

There's only one difference between Couple A and Couple B: Couple A has a family tradition of having only one child per family, whereas Couple B has a family tradition of having two children.

Now, Couple A, both of you were "only children" and you want to continue that tradition, so would you please go pick out your first child from the group and have that child stand in front of you.

Couple B, you have a family tradition of two children, so would you go pick out your two nice children and have them stand in front of you?

Now, child of Couple A, time goes by and you are now grown up. You enjoyed being an only child so much that you decide to have only one yourself. So would you go pick your child from the group.

Likewise, children of Couple B, time has gone by and you each decide to have two children, so would each of you go and get two.

Grandchild of Couple A, it's your turn to go to get your one child. Grandchildren of Couple B, it's your turn to go and get two children each.

Couple A, would you please count up your family, and Couple B, would you please count up yours. If we had four complete generations, there would be five in Family A and 16 in Family B. If we had compared a two-child average family size and a three-child average family size, the numbers would be 16 and 41.*

Now you can see the difference it would make if the childbearing decisions of these two families were multipled by the decisions of millions of couples. While it doesn't matter much if one family has 10 children, if the average family has 10 children, the impact on world population and resources is indeed enormous.

(It is important to be sensitive to the feelings of children from large families; this exercise is illustrative of the cumulative impact of individual decisions and, for the students, would apply only to the future, not the past.)

It looks as if Couple A can have its family reunion at the dining room table but Couple B has to put in all those extra leaves and use a card table, too! Thank you; you may return to your seats.

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* See "The Two- or Three-Child Family" - information section (second section); "tree diagrams," comparing the two- and three-child average family over three generations, are shown.

Variations:

Another interesting way to illustrate the impact of an average two-child family compared to an average three-child family norm if continued over a number of generations is with the use of kidney beans (or any other type of bean).*

Here we have a plastic bag ("baggie") of kidney beans representing the first gene ation of a two-child family: two(HOLD UP) and first generation of a three-child family: three (HOLD UP). Here are the relative numbers for the second generation: 6 (HOLD UP) and 12 (HOLD UP). After three generations, we have 14 (HOLD UP) and 39 (HOLD UP). After four generations, there are 30 (HOLD UP) and 120 (HOLD UP). (An easy way to keep track of the number of beans in each bag is to put a little slip of paper containing this information in each. Just be sure the slips are visible at demonstration time.)

(Another variation: you can also glue beans to poster board to illustrate this same concept. Just copy the "tree" diagram in this teacher's kit.)*

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* See "The Two- or Three-Child Family" - information section (second section); "tree diagrams," comparing the two- and three-child average family over three generations, are shown.

Adapted from The Future and Population: What Will A No-Growth Socie Be Like? A Teaching Module Published by PRB. Statistics are taken from the 1982 World Population Data Sheet.

OBSERVING AND COMPARING

Country	Rate of natural increase	Years to double population	Per capita G.N.P.[a]	Urban population	Life expectancy	Infant mortality[b]	Population under 15 yrs. old
Countries which have stopped growing							
Denmark	0.0%	—	$12,950	84%	74 yrs.	8.5	20%
Luxembourg	0.0	—	14,510	68	71	11.5	20
West Germany	-0.2	—	13,590	85	72	12.6	20
East Germany	0.0	—	7,180	76	72	12.1	20
Fast-growing countries							
Egypt	3.1%	22 yrs.	$580	45%	55 yrs.	103	40%
Kenya	3.9	18	420	14	54	87	50
India	2.0	35	240	22	49	123	40
South Yemen	2.7	26	420	37	44	146	46
A country in transition							
Saudi Arabia	3.2%	22 yrs.	$11,260	47%	53 yrs.	114	45%

a. G.N.P.: Gross National Product, a measure of a country's wealth.
b. Infant Mortality: Number of deaths per 1,000 live births.

Countries approaching or at zpg are different in many ways from countries which are growing rapidly (even though there may be recent slight declines in fertility).

1. Examine the table above for important differences, and note what you observe below (the first answer is given as an example).

	Fast-growing countries	No-growth countries
Per capita G.N.P.:	Low wealth per person	Higher wealth per person
Urban population:		
Life expectancy:		
Infant mortality:		
Population under 15:		

2. Describe briefly how Saudi Arabia —which is changing rapidly—is like a fast-growing developing country in some ways and how it is becoming like a slow-growing developed country in other ways. Why is Saudi Arabia's wealth unusual in regard to its rate of natural increase?

"How Has Population Growth Affected My Life"
A Letter to an Old Friend

Imagine you had a very dear friend when you were young. This friend moved to England when you were both 10 years old. You have remained close friends by writing letters to each other, but you have not seen each other for many years.

In that time many changes have occurred in Egypt and the population has grown rapidly. Write a letter to your old friend, describing the ways population growth has affected your life. You might describe the way the environment has been affected by the increasing number of people. How has the quality of the air or water changed? Do you see less or more farmland? Are there more or less automobiles or donkey carts? Be sure to emphasize the direct effects on you.

Example of a Participant's Letter

Dear George,

Greetings from the land of 43 million people. You remember the time when we were 20 boys in one class. Nowadays in the university at the faculty of Education, English Department, we are 50 students in one section. You remember when we took the circle-bus round the city and could find vacant places to sit. Nowadays we can hardly find room to stand inside the bus. The building where we live used to consist of three storeys, but today it consists of five storeys. Though I had very few neighbors to play with, now I have so many age-group boys and girls in the same building whom I don't even know their names.

Thanks and good-bye.

Yours very sincerely,

Nabil K. Gad

G-12

Those Billions Are Individuals!

1. Draw a line lengthwise down a sheet of paper.

2. On the left side, list the basic needs of every human being: water, food, clothing, shelter, etc.

3. On the right, list the things you need or want for your own lifestyle: color television, stereo, car, hot water, McDonald's hamburgers, etc. Next to each item, name some of the resources or products needed to support these things: oil, electricity, iron, pesticides, grain, water.

4. Cross off three of the items on the right side so that people who lack the basic necessities on the left side can have them.

5. Cross off three more, since continued population growth and development will mean giving up such levels of consumption.

6. How many more items, if any, are you willing to cross off your list to sustain population growth as well as rising consumption in Egypt and the rest of the world?

7. What values, if any, are in conflict?

How to Use a Newspaper Article as a Springboard to Discussion

A photograph of two men talking to each other appeared in the August 8, 1982, issue of the Egyptian Gazette. The caption read, "Actors Sami Al Adi and Ibrahim Khan in a scene from the new TV serial 'Slaves without Fetters' currently under production. The serial touches woman's fight to gain her freedom and equality with man."

Activity One

How would you use this photograph and caption as a springboard to discussion?

Participants' responses: (1) start a discussion on women's enrollment in school; (2) have a debate on women's rights' (3) ask students to explain the title of the serial, "Slaves without Fetters"; and (4) discuss how women can gain rights from their husbands.

Activity Two

Write a three-minute script for "Slaves without Fetters" featuring the two male actors in the photograph.

Examples of Scripts Developed by Participants:

Script A

A man is telling his coworker about the fight he had witn his wife.

Man: I was working, making my accounts, while she was standing in front of the mirror. She asked, "Did you get your salary?" I said, "Yes, I'm dividing it up now." She said, "This month allow for a leather bag, shoes, etc., for me." I said, "Take it all! If you'd stay at home, you could save money on the children's illnesses which are due to your neglect of the household."

Power failure....

Script B

Two friends are talking at the teachers' club where they meet usual every evening.

1st Man: Why haven't I seen you at the club lately?

2nd Man: It's too difficult at home now.

1st Man: But you received your salary two days ago.

2nd Man: But all the expenses--medicine, food, housing, etc.

1st Man: How many children have you?

2nd Man: Four.

1st Man: Why didn't you plan better?

2nd Man: Half the children are mistakes--we didn't use contraceptives.

Script C

Two men at work are discussing the fact that a new woman has joined their ranks.

1st Man: How are you?

2nd Man: Leave me alone.

1st Man: Aren't you comfortable at home?

2nd Man: Yes, but the fuss of children gets me down.

1st Man: Did you hear the news?

2nd Man: What?

1st Man: A new boss--a woman!

2nd Man: How can this be? A woman!

1st Man: When she first arrived she seemed efficient and firm.

2nd Man: I guess that's what the country wants.

Script D

Two brothers are discussing their sister who will soon be divorced.

Brother One: She already has four children!

Brother Two: But today her husband said he wanted a fifth child.

Brother One: All she does now is wash and cook and clean.

Brother Two: She should tell him her health can't take another child.

Brother One: She did but he said he only has four daughters and will divorce her unless he has a son. Also her mother-in-law agrees with her son.

Brother Two: Let us go and talk to our uncle, who can persuade her husband to do the right thing.

APPENDIX H

Appendix H

EVALUATION RESULTS

Pretest-Posttest

Part A

Indicate whether you strongly agree, agree, disagree, strongly disagree with, or are undecided about the statements below.

1. Teaching about population is important.

   Pre 75% Agreed
   Post 85% Strongly Agreed

2. Teaching about population is difficult.

   Pre 60% Disagreed
   Post 90% Disagreed

3. The lecture method is the best way to teach about population.

   Pre 50% Disagreed
   Post 75% Strongly Disagreed

4. Lectures can give a lot of information in a short amount of time.

   Pre 70% Agreed
   Post 80% Agreed

5. Lectures can change attitudes fairly quickly.

   Pre 50% Strongly Agreed
   Post 95% Strongly Disagreed

6. Students learn best the lessons in which they are actively involved.

Pre	65% Strongly Agreed
Post	98% Strongly Agreed

7. Using a variety of teaching methods is most effective for population education.

Pre	70% Strongly Agreed
Post	72% Strongly Agreed

8. I feel ready to teach about population.

Pre	50% Strongly Agreed
Post	95% Strongly Agreed

9. I feel ready to help teachers teach about population.

Pre	40% Strongly Agreed
Post	97% Strongly Agreed

10. Rapid economic development--not slowing population growth--will solve this country's problems.

Pre	46% Disagreed
Post	76% Strongly Disagreed

11. Women must be given new opportunities for jobs and leadership.

Pre	33% Strongly Agreed, 0% Agreed
Post	32% Strongly Agreed, 5% Agreed

12. Men should share with their wives the responsibility for planning the size and spacing of their families.

Pre	50% Strongly Agreed
Post	65% Strongly Agreed

13. Rapid population growth is one of the most serious problems in this country.

    Pre 70% Strongly Agreed
    Post 82% Strongly Agreed

14. It is important that students today plan to have smaller families when they marry.

    Pre 70% Agreed
    Post 71% Agreed

15. The population and environmental problems in this country are solvable.

    Pre 60% Strongly Disagreed
    Post 70% Strongly Agreed

Part B

Define below and provide an example of each of the methods of teaching listed below. (The percent of responses that were correct are given below.)

1.	Small-group work	Pre	0%	Post	90%
2.	Role-playing	Pre	6%	Post	97%
3.	Values clarification	Pre	0%	Post	94%
4.	Using local resources	Pre	16%	Post	97%
5.	Case Study	Pre	10%	Post	19%
6.	Confrontation	Pre	0%	Post	97%
7.	Steps for writing instructional materials	Pre	0%	Post	97%
8.	Springboard	Pre	6%	Post	84%
9.	Brainstorming	Pre	0%	Post	97%
10.	Problem-solving	Pre	10%	Post	90%

APPENDIX I

Appendix I

LIST OF PERSONS CONTACTED

US Agency for International Development

- Mr. Thomas Reese, Population Office, Cairo
- Ms. Laura Slobey, Population Office, Cairo
- Mr. Marschal Rothe, Population Office, Cairo

Ministry of Education, Egypt

- Mrs. Zeinab Abdullah Bishrey, Undersecretary for Preparatory and Secondary Education
- Mr. Mohammed El-Sayed Gamil, Chief of Population and Environmental Education Office
- Mr. Mohammed Said Mattar, Division of Education Research; translator for the workshop
- Mr. Shaffik Atta, former Undersecretary for Preparatory and Secondary Education; consultant
- Mr. Mansur Hussein, Deputy Minister of Education
- Dr. Yousef Khalil, former Director of Education Research
- Dr. Mohammed Abu el Ela, former Undersecretary for Secondary Schools, Director of the Minister's Bureau
- Dr. Guirguis el-Rashidi, new Undersecretary for Secondary Education

APPENDIX J

Appendix J

MATERIALS USED AND EXHIBITED IN THE WORKSHOP

Printed Materials

"Children: A Constant Concern," Interchange, Vol. 11, No. 1, April 1982. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

"Egypt: The Effects of Population Factors on Social and Economic Development," R.A.P.I.D. 1980. The Futures Group, 1029 Vermont Avenue, N.W., Suite 200, Washington, D.C. Handbook and 35mm slides.

Food for Thought, A Population Simulation Kit, revised edition, 1980. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

Global 2000 Countdown Kit, 1982. Zero Population Growth, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036.

Investigating Your Environment: Teaching Materials for Environmental Education, 1977. United States Department of Agriculture, Forest Service, Washington, D.C.

Jacobson, Willard J. Population Education: A Knowledge Base, 1979. Teachers College Press, New York.

Murphy, Elaine M. "The Future and Population: What Will A No-Growth Society Be Like?" (teaching module), 1978. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

Murphy, Elaine M. "World Population: Toward the Next Century" (teaching module), 1981. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036

1982 World's Children Data Sheet. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

1982 World Population Data Sheet. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

Population Dynamics of the World, 1981. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

Population Education Resources Kit, revised edition, 1980. Zero Population Growth, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036.

Population Education: Sources and Resources, 1979. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

PRB Chart Series I: Charts on World and U.S. Population Topics, 1975. Population Reference Bureau, 1337 Connecticut Avenue, N.W., Washington, D.C. 20036.

Audiovisual Aids

"For Your Pleasure," 3-minute, 16mm film, 1972. Mass Media Ministries, 2116 No. Charles Street, Baltimore, Maryland, 21218.

"World Population," 3-minute, 16mm film, 1972. Coronet Films, 65 E. South Water Street, Chicago, Illinois, 60601.

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