

the significance of releasers and other body language and verbal and nonverbal clues. One can go from perfume or shaving lotion commercials to a discussion of the makeup of perfumes, their origins, their past and present uses in attraction as well as in masking odors of filthy bodies, then into a discussion of natural human odors, sexual attractants, and pheromones. Most people seem totally unaware that cosmetics can be dangerous, and it would be the Devil's own job to find out the contents of a cosmetic, unless the manufacturer tells you. As this is being written there have been some news accounts indicating that this may be changing. Let's hope so. The advertised (at least, by implication) effectiveness of mouth washes in killing common cold viruses is easy enough to scuttle. This can lead into a discussion of how disinfectants do and do not work, what viruses are, contagion, and so on. And toothpaste ads with their "brighteners," "whiteners," and other claims make fertile fields for commentary. Just what is this "sex appeal" they so stridently proclaim their favored soap will give you anyway? Nonsense about "iron poor blood" can lead into a discussion of hemoglobin and anemias. Cigarette ads no longer appear, but I have several choice ones from the past. The ads for small cigars can serve just as well. Glass tubing guts are almost too ridiculous to bother with, as are sink drain sinuses and indicator dyes showing a color change.

Well, there are a great many of these. Anyone can easily find his own. There is nothing very difficult or profound about doing this. The students can get a kick out of it as well as learn. Education need not always be a crashing bore.

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## RESOURCES FOR POPULATION EDUCATION

1974 was World Population Year, and changes in numbers and locations of people emerged as an issue of global and national concern. Although the population growth rate in the U.S. has declined significantly in the last year, this does not decrease the importance of population education in schools. The report of the President's Commission on Population Growth and the American Future (1972) defines population education as "the process by which the student investigates and explores the nature and meaning of population processes, population characteristics, the causes of population change, and the consequences of these processes, characteristics, and changes for himself, his family, his society, and for the world."

Although we in the U.S. make up 6% of the world's population, we consume almost 40% of the global resources. Thus, the implications of individual population-related behavior should be a major area of concern. In the context of developing responsible behavior in the area of reproduction, resource use, and mi-

gration, the sciences—especially biology—play a vital role.

**Population Education Programs.** The Population Council (245 Park Ave., New York 10017) is one of the pioneer organizations in the field of population education. Its members have been concerned with the content of population education and how it enters the educational process. The first national conference on population education was held in 1971 by the Population Reference Bureau (1755 Massachusetts Ave., N.W., Washington, D.C. 20036). The proceedings of this conference have been published (1971b), and the Bureau also publishes a newsletter, *Interchange*, which serves as a resource guide for teachers. World Education (1414 Sixth Ave., New York 10019) is primarily interested in international population education and provides a valuable resource, *World Education Reports*. The Zero Population Growth's *National Reporter* carries a section on population education and a teacher's resource package is available from the national office (1346 Connecticut Ave., N.W., Washington, D.C. 20036).

Several universities in the U.S. have developed teacher training programs in population education. One of the earliest is the program at Columbia Teachers College, directed by Sloan Wayland (1968, 1972a, 1972b). The program at Indiana University, directed by Jerry Brown (1972), is geared to teacher training, research, and curriculum development in the social sciences. The Harvard University Center for Education and Development has a population education unit directed by David Kline (1972), which is concerned with international population education. The development of population education as a part of environmental education is the focus of the program at the University of Delaware directed by Robert Stegner (1971). Byron Massialas (1972) of Florida State University has developed a program for population education in the social sciences using the inquiry method.

**Content of Population Education.** Burlson (1971) has suggested that population education should involve four major concepts: population dynamics, family living, reproductive education, and underlying values. The University of Delaware's Population Environmental Education Project (1972) integrates population concerns into environmental education. The major conceptual scheme of this approach is that "Man is a part of a natural system, the earth, and is ultimately subject to the limits of the system."

Perhaps the most comprehensive sourcebook on population was developed by Horsley et al. (1972). It is directed to students in grades 7-12 and is multidisciplinary.

In the value clarification approach of Massialas (1972), alternate viewpoints are presented to the learner, who then makes informed choices about various population issues. Nelson (1972) is another valuable reference for the value clarification approach.

Following the report of the President's Commission, the Population Reference Bureau (1973) developed a film *Population and the American Future* for classroom use along with a study guide *Options*. A number

of other films on population have been reviewed by Heuther (1974).

**Strategy for Population Education.** Although many approaches to population education have been developed (additional references are included below), there is considerable concern among educators about the strategy involved.

There are at least three alternatives for introducing the subject into existing curricula. It can be taught as a complete course, which is advantageous for developing a specific area of concern; but the difficulties of adding an additional course to an already crowded curriculum can create problems. The unit approach may also present problems for teachers who are presently struggling to complete the existing content of courses. The infusion method, in which population concepts are introduced into curricula at various appropriate points, has proved most effective for countries which are responding to their own significant national population growth; but careful study of existing curricula should be undertaken before attempting infusion.

Although population education should be value-free, Viederman (1973) points out that many textbooks are biased toward stereotypical sex roles for both parents and children and contain pronatalist overtones. He also notes that much supposedly scientific material about population problems is presented in the context of a crisis approach. Materials are often developed in response to a perceived problem, when the dimensions of the problem are not fully understood.

The excellent study by Simmons (1970) analyzes the various approaches to population education, and Viederman (1971) provides a useful review of population education programs. The most comprehensive study of population education in the U.S. is probably the President's Commission (1972) report. The report calls for the enactment of a population education act, the improvement of teacher training, and the development of resource materials for teaching about population.

## References

BROWN, J. 1971. Plan for instructional unit in population education. Microfiche ED 066 366. ERIC Clearinghouse, Washington, D.C.

———. 1972. Principles of instructional design and population education materials development. Population Education Project, Indiana University, Bloomington.

BURLSON, D. 1971. *The time is now—population education*. Population Reference Bureau, Washington, D.C.

HEUTHER, C. 1974. Population dynamics: questions and answers. *Equilibrium* 2(1):19.

HORSLEY, K., D. DRIGOT, L. MANGOLD, M. SCHROEDER, and J. WADE. 1972. *Sourcebook for teachers on environment population*. Population Reference Bureau, Washington, D.C.

KLINE, D. 1972. Why, what and how population education in the schools. Graduate School of Education, Harvard University. Mimeographed.

LANE, M. T., and R. E. WILEMAN. 1974. *A structure for population education*. Carolina Population Center, Chapel Hill, N.C.

MASSIALAS, B. 1972. Population education: as exploration of alternatives. *Social Education* 36(4):347.

NELSON, J. 1972. *Population and survival*. Prentice-Hall, Englewood Cliffs, N.J.

POPULATION REFERENCE BUREAU. 1971a. Population education: challenge of the seventies. *Population Bulletin* 26(9).

———. 1971b. *Report of the First National Conference on Population Education*. Population Reference Bureau, Washington, D.C.

———. 1973. *Population and the American future*. Population Reference Bureau, Washington, D.C.

PRESIDENT'S COMMISSION ON POPULATION GROWTH AND THE AMERICAN FUTURE. 1972. *Final Report*. Government Printing Office, Washington, D.C.

SIMMONS, O. 1970. Population education: review of the field. *Studies in Family Planning* 52:1.

STEGNER, R. 1971. A plan for population environmental education. *Science Teacher* 38(3):23.

UNIVERSITY OF DELAWARE POPULATION ENVIRONMENTAL EDUCATION PROJECT. 1972. *A conceptual scheme for population environmental education*. University of Delaware, Newark.

VIEDERMAN, S. 1971. Population education in the United States. *Report to the President's Commission on Population Growth and the American Future* Mimeographed.

———, (ed.). 1972. Population education. (Special issue) *Social Education* 36(4).

———. 1973. Values, ethics and population education. *Hastings Center Reports* 3(3):6.

———. 1974. Towards a broader definition of population education. *International Social Science Journal* 26(2): 315.

WAYLAND, S. R. 1968. Population education, family planning and the school curriculum. *Journal of Family Welfare* 15(2):3.

———. 1972a. Basis for determining the content of population education. Teachers College, Columbia University. Mimeographed.

———. 1972b. *Issues and problems in introducing population education*. Series D2. UNESCO Regional Office, Bangkok, Thailand.

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## CORRECTION

Because one line was omitted from the table accompanying "Individualized Instruction in Advanced Placement Biology," by Dorothy C. Van Horn (*ABT* 37[4]:235), the table is presented again, in its correct form.

**Results of AP biology exam administered before and after individualized instruction was initiated.**

Year	Number enrolled in AP biology	Number taking the exam	Number of grades of <sup>a</sup>					% Passing
			1	2	3	4	5	
1970-71	16	10 ( 64%)	0	1	6	2	1	90
1970-72	12	11 ( 92%)	2	2	4	1	2	64
1972-73 <sup>b</sup>	12	12 (100%)	0	0	6	3	3	100
1973-74	13	13 (100%)	0	0	6	4	3	100

<sup>a</sup>The results of the AP exam are converted by the chief readers to the program's five-point college-level scale: 1—no recommendation; 2—possibly qualified; 3—qualified; 4—well qualified; and 5—extremely well qualified.

<sup>b</sup>Individualized instruction initiated.