

## EDUCATION

# 'Teach and Learn' Urged

An educational program incorporating the new concept of learning by teaching was proposed at the White House Conference on Education—By Ann Ewing

► A BOLD NEW CONCEPT of education, called learning by teaching, was urged in Washington, D.C., as a powerful method for educating youngsters, teen-agers and adults.

In learning by teaching students take part in the education of other students, either younger or the same age. The way such a program would work was outlined to the White House Conference on Education by Dr. Jerrold R. Zacharias, physics professor at Massachusetts Institute of Technology, Cambridge.

"All of us have had the experience of learning something by doing it. This is the method of choice, the most powerful method of all," Dr. Zacharias said.

However, he noted that "all of us" have also had the experience of learning something by teaching it to someone else, or by helping someone else to learn it. This, Dr. Zacharias said, "also is a powerful method in education."

He suggested, as an example of the program, that a good way to begin a college course on the properties of light would be to have the college students teach children about light.

"We can see an object, not by having something move from the eye to the object,

but by having something go from the object to the eye.

"But what goes from the object to the eye? How does it go? In straight lines? . . . And when?"

By finding the answers to such questions, and others that would occur as these were being answered, Dr. Zacharias said the "ten year olds and the eighteen year olds will not just be learning facts. They will be learning how to learn, how to see and observe, how to reason, and they will be learning something about the properties of light."

Although this particular course is not now being tried, he noted that it is similar to courses going on in several colleges.

Using students as teachers has a second "virtue," he reported.

"So far I have been talking about a student learning a subject by teaching that subject, but the student-as-teacher, of course, is also learning how to teach.

"And he is learning this by the most powerful of all methods, learning by doing," Dr. Zacharias said.

Such a program, he predicted, "would result not only in an immediate improvement in the education of the ten year olds and eighteen years olds involved, but also in the recruiting of a new group of enthusiastic teachers."

Students teaching others their own age would be "especially valuable in communication arts of speaking, listening, reading and writing," Dr. Zacharias noted.

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## EDUCATION

## Race and Income Keep Johnny From Reading

► WHETHER "JOHNNY" can read or not, and the reasons he can or cannot read, or does not want to, are among the problems faced at the White House Conference on Education in Washington, D. C.

Education is the only industry in the United States continuing business despite the fact that it produces a million products unfit for consumption—unemployed youth of the country from 16 through 21.

Dr. John W. Gardner, conference chairman and president of Carnegie Corporation, New York, singled out the evaluation of educational performance as one of the "tough issues" debated by the 150 panelists and 500 other participants at the conference. There are now, Dr. Gardner said, adequate tests to tell how well a single "Johnny" reads. However, there is no way now to test the level of achievement of Johnny's class as a group.

In assessing educational performance, Dr. Gardner suggested that such questions as the following should be answered:

1. Do sixth graders now read as well as sixth graders 20 years ago did, whether from the same part of the country or from different regions?

2. Do fourth graders from California or Florida now read as well as those from New York?

Tied closely with the problem of evaluating educational performance is that of segregation in schools, which follows not only the color line but one based on income level.

Both Negro and white children having a background where the struggle for survival must be met and won each day see the world very differently from middle-class children who are brought up to believe that anyone can get to the top if he tries hard enough.

Because of "defacto" segregation due to Negro "ghettos," Negro children find it particularly difficult to bridge the gap between every-day pre-school life and the middle-class values taught in school.

Project Head Start is one program to help the underprivileged cross this gap.

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## Invasion of Classroom By Gadgets Foreseen

► MACHINES that may teach the students of the future are attracting both industrialists and educators.

One gadget enables each student in the classroom to take tests that are corrected as they are given, with the student "talking back" to the teacher. Typewriters operated by the student will admonish and inform the learner when a wrong answer to a problem is typed.

Teachers now can have a television "assistant" which will allow them to create a "canned" lesson that does not require the amount of film or tape that continuous TV requires. Phonovid, a Westinghouse development, presents TV pictures that come directly from a phonograph record.

Dozens of different kinds of teaching machines reply to wrong answers by giving more and correct information. They are being produced by many companies who see education automation as a field for industrial enterprise making dollars and brighter students.

Some teaching machines look like conventional books. Others look like portable television sets. The basis of the teaching machine method is automatic response which corrects errors, thus copying the method that teachers have used over the years.

These and other aids to education were demonstrated in New York at the First Annual Conference and Exhibit on the Impact of Educational Technology, sponsored by the American Management Association. The purpose of this gathering of machines and their makers is to help educators "communicate needs and desires to industry and to permit industry to define its needs for the world of work." Approximately 80 exhibits were on display.

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IBM

**COMPUTER ENTHUSIASTS**—A group of pre-school children in Poughkeepsie, N.Y., are being given a brief lesson on the workings of a computer by George G. Heller (seated), International Business Machines Corporation engineer, with the aid of pieces of candy and other familiar objects.