

U.S. Students' Low Rank Challenged

By **ROBERT GREENE**

.c The Associated Press

WASHINGTON (AP) - An international test that showed U.S. 12th-graders doing poorly in math and science is "seriously flawed" and of little value in measuring how well students are doing, an educator contends.

The Third International Mathematics and Science Study "tells us little about the quality of education" in the United States or other countries, education professor Iris C. Rotberg said in an article today in *Science*, the journal of the American Association for the Advancement of Science.

The latest test results, released in February, showed that high school seniors in this country performed below the international average in a 21-nation comparison of students in their final year of secondary school. They did even worse in a comparison of those who took physics and advanced mathematics.

But Rotberg, research professor at George Washington University and critic of previous versions of the test, said the international comparisons are invalid because the characteristics and numbers of students varied from country to country. "These reactions are based on a misleading and seriously flawed study," she said.

In countries where fewer students finish school, for example, results are higher because the poorer students have been weeded out. Also, secondary school lasts longer in some countries, so "older, more advanced students" scored higher. Other students attended specialized schools that focused on science and math, while the Americans were chosen from all kinds of schools, even vocational ones.

The study also ignored the role of poverty and related problems such as crime, violence and poor health and nutrition, the critique said.

Earlier this month, independent analyst Gerald W. Bracey wrote in the *Phi Delta Kappan*, a magazine for educators, that "no statistical manipulation" can make the rest results credible.

"If the math and science literacy scores were accurately calculated, factoring in appropriate variables, the United States would be about average," he wrote. "Not a cause for celebration, to be sure, but not the disaster so far painted."

Many of the criticisms have been voiced before, and the Education Department has addressed them in speeches and statements by Pascal D. Forgione Jr., U.S. commissioner of education statistics.

Among Forgione's points:

The test is meant to compare students at a similar point in the educational system - the end of secondary school - not students of the same age or year of schooling.

The age gap has been overstated. Although students from Iceland averaged 21.2 years and U.S. students, 18.1, the international average was 18.7. The gap was narrower for students taking advanced courses. Besides, schooling starts at a later age in some countries.

Among 17-year-olds, the United States had a higher percentage enrollment, so scores should have

been higher.

Questions on the general knowledge test were based on material that would have been covered by the ninth grade for math and 11th grade for science in the United States.

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