



# First Reports from the National Assessment

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ON JULY 8, 1970, reports from the first year of the National Assessment were presented to the Education Commission of the States, the sponsor of the program, at its annual meeting. It was in July of 1963 that I was asked to develop a design for a census-like appraisal of the educational attainments of American children, youth, and adults. The intervening seven years were required to develop a plan involving the cooperation of school people, scholars, scientists, and the public and to construct the first sets of assessment exercises that could be used in this national survey. I would like to comment briefly on the current status of the National Assessment and my own reaction to its present course.

## What Children Are Learning

As one who has devoted the major portion of his life to work on curriculum development and evaluation, I see the National Assessment techniques offering a procedure for curriculum evaluation that has not been possible with currently used achievement tests. The National Assessment begins with statements of curriculum objectives and builds a set of exercises to sample each of

the major objectives. The purpose is to find out *what* children are learning. Hence, an important requirement is that the exercises represent what is being learned by the so-called slow learners and what is being learned by the more advanced, as well as what the average are learning. The contractors responsible for constructing the exercises directed that one-third of the exercises were to represent what the lowest third were learning, with one-third representing what the highest third were learning, and one-third representing what the average were learning. This proved to be a very difficult assignment for the contractors. What they submitted initially included less than 10 percent for each of the upper and lower thirds.

This difficulty was due to the fact that achievement test constructors have viewed their task as one of measuring individual differences and placing each child on a continuum from the highest to the lowest score. For this purpose, exercises at the 50 percent level of difficulty are most effective. How-

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ever, since these achievement tests sample only exercises that discriminate among children and do not systematically sample what children are learning, it is not possible from them to get a reliable indication of the results of instruction. The National Assessment exercises demonstrate a technique to enable curriculum workers to appraise what children are learning in terms of the objectives of the curriculum. This gives us a new and useful tool.

Since the assessment reports *what children are learning* rather than *where they stand in comparison with other children*, we as curriculum makers cannot use this tool unless we give careful attention to and define clearly the educational objectives the curriculum is designed to help children reach. This is necessary in order to select exercises that faithfully represent these objectives. The reports of an assessment use each exercise or group of exercises representing an objective as the base and give the number or percent of the children who have performed successfully. Because each exercise is presented in the report, the reader can see for himself what it is the curriculum maker has expected children to learn. If it is trivial, mistaken, or highly technical, it will be brought to public attention. Hence, we cannot cloak our exercises in secrecy, reporting only abstract scores. I believe this is a helpful stimulus to us to clarify the goals of the curriculum.

### Facts, Skills, Attitudes

Turning to the results reported in science, citizenship, and writing, the subjects included in the 1969-70 assessment, several generalizations are immediately obvious. In knowledge and skills, generally the performance of 13-year-olds is higher than that of 9-year-olds, and that of 17-year-olds is higher than that of 13-year-olds. For some exercises, the adult performance is higher than that of 17-year-olds, and for some exercises the reverse is true. The learning of facts and skills appears to progress regularly through the school years. But this is not true with regard to attitudes. Note the results of the following exercise:

"People feel differently toward people of other races. How willing would you be to have a person of a different race doing these things?"

Situation	Percent willing to by age		
	13	17	Adult
A. Be your dentist or doctor?	81	74	75
B. Live next door to you?	83	77	67
C. Represent you in some elected office?	81	82	82
D. Sit at a table next to yours in a crowded restaurant?	80	90	88
E. Stay in the same hotel or motel as you?	88	92	89
<i>Willing to for two or more of the above</i>			
Two or more	96	97	93
Three or more	94	94	90
Four or more	89	88	86
All five	56	56	56

On this exercise and on several other exercises involving attitudes, there is no consistent increase with age.

In the field of writing, the adequacy of the written products increases with age in business statements and social letters, but in those written communications requiring observation and reporting the results are not consistently higher with age. This suggests either a different emphasis in teaching or a differential amount of interest and use by pupils.

The latter appears to be the more probable explanation, because in science the exercises that were performed correctly by a majority of 17-year-olds and adults are those that are applicable to everyday life or can be learned from out-of-school experiences, while most of the exercises involving information that is used primarily by scientists or in college science courses were not answered correctly by a majority of youth or adults. As an example, note the results of the following two exercises:

"Information about which one of the following is most important in predicting weather?"

	Percent selecting the choice		
	13-year- olds	17-year- olds	Adults
The available supplies of water	1	1	2
The daily extremes of humidity	12	9	3
The daily extremes of wind speed	4	1	1
The daily extremes of temperature	17	9	3
The movement and characteristics of air masses	59	77	85
I don't know	6	4	5
No response	0	0	1

"Which of these has been used to obtain accurate estimates of the age of the oldest known rock strata?"

	Percent selecting the choice	
	17-year-olds	Adults
Radiocarbon dating	25	22
Uranium-lead dating	9	3
Potassium-argon dating	2	3
Estimation of sedimentation rates	11	5
Correlation of age of fossils contained in the strata	38	22
I don't know	15	43
No response	0	1

The correct answer to the first exercise was known by 59 percent of 13-year-olds, by 77 percent of 17-year-olds, and by 85 percent of the adults, whereas only 9 percent of the 17-year-olds and 3 percent of the adults knew of the use of uranium-lead dating. The information involved in the first exercise can be used frequently by the layman and can be learned from everyday experience with weather reports, while the information involved in the second exercise has limited usefulness for the layman and is not likely to be acquired apart from direct instruction.

These few illustrations of results that

are being presented in the reports of the first year's assessment suggest some implications for instruction. Knowledge and skills are being learned by most American children, but if the relevance of particular skills to out-of-school experience is not made manifest, these are not likely to be learned by a majority of the students.

The development of democratic, humanitarian attitudes is commonly viewed as one of the major goals of education in American citizenship. These goals are not as universally attained as is the acquisition of knowledge and skills. The curriculum in this area should be carefully reviewed to see whether students are actually involved in activities that give them a chance to sense the way other people feel and to see the effect of their own attitudes on others.

## As We Gain Experience

There are a number of generalizations like these that emerge from the current reports, but in addition the publication of these results enables the curriculum maker to discuss important problems objectively against the background of data from the nation, from the region, from various types of community settings, and for children from different types of home backgrounds. One does not need to conceal the existence of learning problems in his own school when he sees that they are common to many other schools. Furthermore, these reports will encourage many of us to assess the situation in our own school so as to identify any unusual areas of progress and problems.

In the initial round, the contractors did not produce enough exercises involving student-initiated learning and inquiry learning to draw reliable inferences about the percent of children who are developing these interests and skills. The National Assessment Staff is focusing greater attention and effort on obtaining more and better exercises in these areas in the future. Test makers have had little or no experience in such areas in the past. Each cycle of assessment should bring improved and more adequate exercises.

I have been asked to comment on my

present feelings toward the project. The foregoing statement illustrates my belief that the National Assessment is not only providing the lay public with some dependable data about what our children, youth, and adults are learning, but it also has significant values for the teacher and the curriculum worker. I am glad, too, that a better understanding of the project has developed among school people so that administrators, teachers, and other school personnel are now actively engaged on policy committees, on exercise development committees and panels, and are cooperating in the collection of data.

At one point, in the winter of 1967, it appeared that some educational groups were strongly opposed to the whole program of National Assessment and that the project

would become an issue separating some educational groups from others and placing school administrators and lay citizens in opposite camps. Fortunately, as more school people have become involved in National Assessment, the project has become better understood. It is no longer seen as a national every-pupil testing program, nor one that threatens individual pupils, teachers, schools, or school systems. It has no more to do in influencing the curriculum than data about the incidence in the nation of cancer and heart disease influence the physician's treatment of his patients. The National Assessment is by no means an ideal program. It needs improvement, and I believe it will be improved and become more helpful to all of us as we gain experience with it. □

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