Education: PSAC Panel Draws On Experience of Curriculum Reform To Point Way to Wider Innovation

It comes as something of a jarring note to find a section on music education in a report of a panel of the President's Science Advisory Committee. But a reading of the report, *Innovation and Experiment in Education*,* and a glance at the names of the panel members and other people involved in the group's work, dispels the surprise.

This "progress report" is a product of the PSAC panel on educational research and development headed by Jerold T. Zacharias, professor of physics at M.I.T. and a full member of PSAC. Zacharias has been a prime mover in the Cambridge-based Physical Sciences Study Committee (PSSC), which developed a widely used modernized course in high school physics. And his experience with PSSC led him to an interest in the more general problems of education, particularly to an interest in applying the lessons learned in the curriculum reform effort more broadly.

The panel on educational research and development, which gave Zacharias a Washington base of operations, was formed in 1961. Its creation obviously reflected a sympathy for such efforts on the part of Jerome B. Wiesner, who came to the capital as science adviser to President Kennedy at the start of his term in 1961. Judging from his public statements, Wiesner himself grew progressively more concerned and better informed about fundamental problems in education at the school level during his 3 years in office. The present report was substantially complete when Wiesner left the government early this year.

The education panel, which operates under the "auspices" of PSAC, differs in some ways from the regular PSAC panels which deal with such hard science matters as high-energy physics and specialized problems of scientific and technical manpower. The education panel depends for staff work on the Office of Science and Technology, as do the other PSAC panels, but, unlike them, reports not only to Wiesner's successor, Donald F. Hornig, who is director of OST and science adviser to the President, but to the Commissioner of Education and the director of the National Science Foundation, whose agencies administer the major federal programs affecting both the higher-education and the elementary and secondary schools.

In commending the report to the public, Education Commissioner Francis Keppel, NSF director Leland J. Haworth, and Hornig note that the panel was formed to "explore the contribution research and development can make to education—including instructional materials, classroom practices, teacher education and school management."

In its first venture at making its opinions public the panel has put forward a number of specific but not detailed "leading ideas." The two major recommendations are for (i) the creation of model school systems to carry out intensive experimentation in the education of the deprived and segregated, and (ii) major reforms in teacher training.

Anti-Isolationist

If the report can be said to have an underlying theme it is that a major problem for the schools is isolation—that professional educators are a sequestered and defensive lot, that the schools have cut their lifelines to scholarship and research and have lost contact with the crafts and arts and professions for which they are preparing their students. Many of the panel's recommendations suggest ways in which this isolation might be broken.

In sum, the report represents a strong strain of what, for lack of a better term, can be called "new wave" criticism of education. American schools have never lacked critics, and since World War II the public debate on education has gone through several phases. But recently one group of critics has emerged which is better informed about what actually goes on in schools and inclined to apply the techniques of sociology, psychology, and communications theory to education problems.

The situation to which the critics are reacting is influenced by many factors. The postwar baby boom vastly increased school enrollments, and the great expense of furnishing classroom space and hiring teachers made education a public issue. Major shifts of population which resulted in concentrations of middle-income families with school-aged children in the suburbs caused the heaviest pressure to be exerted on the suburban school systems.

The cold war and the quest of the "subdivision" middle class for status through education fueled a censorious reappraisal of the status quo in public education. Critics like Admiral Hyman Rickover and Professor Arthur Bestor led the charge against the establishment. Complaints that "Johnny Can't Read" and that American schools were "too soft" and had too many "frills" were familiar in the middle and late 1950's, and these complaints, and the Sputnik furor, undoubtedly contributed to more emphasis on such things as ability grouping and honors programs, and to greater stress on languages, science, and math.

Another line of debate on the schools might be said to have been opened with the Supreme Court decision on desegregation. Mounting concern over delinquency and dropouts was also to focus attention on the social role of the schools.

This broadening of concern is exemplified in the work of James Conant, whose study of American schools has made him a sort of quasi-official inspector-general of education. Conant showed a primary concern with the formal academic aspects of public education in his first report on the high schools, but seemed to adopt a sociological frame of reference as his interests focused on slum schools and teacher education.

Since the middle 1950's the activists in school reform have tended to follow two main lines of attack—curriculum revision and "compensatory" programs for the deprived and segregated. The new PSAC panel report blends these two and argues that such programs represent a kind of research that badly needs to be done. The implication is that they be financed by the federal government and by foundations.

The outlook of the panel is obviously influenced by the PSSC experience with the physics course. In his introduction to the report Zacharias writes, "The Panel on Educational Research and Development is seeking to apply the lessons learned in such efforts to other areas. The aim is to increase the efficiency and efficacy of the entire educational establishment, and so multiply the effectiveness with which all funds are spent."

With only a nod to economy and the most oblique allusion to national security, health, and economic development, the report takes the unusual course of implying that education is worth improving for its own sake.

* For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price, 35 cents.

As another departure from convention, the panel report proves to be well written, refreshingly free of either education-journal jargon or the flabby depersonalized prose of the ordinary government report. The authors and editors even dare to use humor to make a point or two.

The section on music education is based mainly on a 2-week seminar at Yale, which seems to have been devoted largely to an exploration of whether techniques of curriculum reform developed for the sciences—essentially, getting school teachers and research scholars to work together—can be adapted to education in the arts. Music teachers and administrators were mixed with professional musicians, including jazzmen, and the verdict seems to have been that both sides thought it would be both possible and desirable to break down the barriers between the groups which make music education in most schools a stuffy, closed-shop affair.

Breaking Barriers

In discussing the major recommendations of the report, Zacharias traces the need for model school systems and improved teacher education to the same source. "Both programs," writes Zacharias, "develop out of the circumstances that our modern school systems have evolved largely in a middle class context. The task of bringing the deprived and segregated into larger society is difficult. And despite some modest efforts and some modest successes, we really know very little about how to accomplish this task. Of course, more classrooms and teachers are an important part of the answer, but as the two proposed programs indicate, the panel does not believe that simply offering more of the same is the full solution."

In the report, the basic flaw in teacher education is described this way.

"A vast number of institutions are now busy offering instruction in pedagogy and related matters. But formal instruction in these institutions makes little connection with the problems that the teacher actually faces when he is teaching in a school, largely because of the abstract approach and the level of generality at which the material is taught."

While the panel's recommendations on teacher education are only sketched in, they emphasize that it is necessary to develop more rapid ways of disseminating new ideas, such as the modernized curricula, and that reforms are needed not only for the student who is training to teach and the teacher in service but also for the teacher of teachers.

One suggestion the panel makes for moving teacher education nearer to the realities of teaching is to develop films which will impart a knowledge not only of subject matter but also of techniques needed in special situations.

"Films," says the report, "can help prepare teachers for meeting recurrent teaching problems common to many courses—although the teacher in the film should be teaching a particular subject. Among recurrent teaching problems are these: How do you teach students who are convinced they cannot do the work? How do you teach students who are always sure they are right? How do you teach slow students? How do you teach students who are brighter than you are? There are special problems, too; for example: What do you do with the child who freezes when asked a question? How does a teacher get out of such a situation and how does he avoid getting into it in the first place?"

The fact is that films of the kind the panel advocates do not at the moment exist. The experience of PSSC in producing films of a kind that had not been available before, however, persuaded the people behind the report to believe that, given the present "state of the art," the development of such films is a possibility.

Reform Through Technology

While the report puts a fair amount of stress on the potentialities of these films, there is little sign that the panel members are bemused by technology, as some educational reformers have been. Educational television and programmed learning, for example, have in many places been robbed of maximum impact because they were used out of overoptimism or desperation.

The education panel, incidentally, is not dominated by scientists and engineers, but rather is recruited almost entirely from among what could fairly be called the national establishment in American education. It numbers among its members such hierarchs as the president of Teachers College, Columbia, the general superintendent of schools in Chicago, and the president of the American Council of Learned Societies, plus a sprinkling of foundation and association notables and university scholars and Washingtonians implicated in educational reform.

The educators and administrators and the professionals from other fields involved in the meetings, however, represented a much broader spectrum of prestige and a wider geographic spread than the panel, and in this sense give the panel a broader base.

Asking how effective the panel will be is like asking how effective the Conant evaluations or the Rickover obiter dicta are. For educational reform is very much a matter of little drops of water or little grains of sand.

Major experimentation in education along lines suggested by the panel would clearly require a substantial infusion of federal funds. Both the Office of Education and NSF appear hospitable to programs designed to improve specific aspects of education, so long as this can be done without aid's being interpreted as interference. But the panel's prospects of exerting direct influence on legislation are dim, since the group has only a tenuous connection with the White House and no visible link at all with Congress.

The best immediate chance for obtaining new federal funds for such panel projects as model school systems and special teacher training seems to lie in the Economic Opportunity Act of 1964, more widely and candidly known as the Poverty bill. The bill has a section on Urban and Community Action programs, under which it would apparently be possible to implement some of the panel's ideas.

President Johnson has put the Poverty bill on a list of five priority measures, but its fate will be influenced, in more than one way, by the outcome of the debate on civil rights legislation.

—JOHN WALSH

Lie Detectors: Sleuthing by Polygraph Increasingly Popular; Claims of Accuracy Are Unproved

According to information turned up by a House Government Operations subcommittee,* the American Battle Monuments Commission does not use lie detectors. Neither do the Indian Claims Commission, the Federal Aviation Agency, the St. Lawrence Seaway Development Corporation, or 35 other

* *Use of Polygraphs by the Federal Government: A Preliminary Study, by the Foreign Operations and Government Information Subcommittee.* The chairman of the subcommittee is Representative John Moss (D–Calif.).