

Can an in-service institute help teachers of the disadvantaged change their patterns of teaching behavior?

For Elementary Teachers . . .

Mass In-service Education?

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THE statistics are familiar to everyone—more than a million elementary school teachers with a turnover of twenty or more percent per year, but with effective in-service education reaching only a very tiny fraction of the total group; wonderful, innovative ideas for curriculum tried in a few schools, but hardly a smidgeon of these ideas reaching out to the garden variety of schools. And the situation in schools located in disadvantaged areas is much worse—poorer facilities, less experienced teachers, unstable faculty, mobile pupil populations, and more of everything deleterious to sound, long-range education.

It was this dreary picture which bothered us at Hunter and motivated us to play the “numbers game.” We asked the question: Can personalized, experimental in-service education be brought to large numbers of elementary school teachers so that each of them can be helped to change his patterns of teaching behavior? Furthermore, we asked if this could be done with teachers from schools in the most disadvantaged areas of the city, and done at a cost which would be economically feasible. To find our answer, we proposed a special NDEA Institute.

We planned for a large group, fifteen schools and all of their primary grade teachers. We ended up with 240 participants—fifteen supervisors and 225 teachers. We planned to combine the talents of college personnel with those of elementary school supervisory personnel. We spent the spring of 1966 training ourselves (both college staff and school supervisors) as teacher educators. We planned to try our program with elementary school science, and we did.

We brought together three kinds of specialists, early childhood educators, science educators and scientists. Experts from these fields worked with the supervisors and college personnel during the spring and with the teachers and the supervisors during the summer. We knew that we must bring individualized experiences to each of the

teachers but that we needed to reach the large group on a mass basis. So we made use of large-group experiences with lectures and kinescope viewings seen and heard by everyone at once, but every such large-group experience was followed by a related, small-group activity in which each of the supervisors led the teachers from his own school in laboratory experiences with the science being studied or took his teachers over to a nearby summer play school for a practicum with children.

In short, then, by designing a combination of large-group and small-group activities, we hoped to meet our obligations. Here is what happened.

The Institute Program

The institute was organized in two operational phases. The first phase was a fifteen-week intensive training and orientation program for the fifteen elementary school supervisors who would become the classroom instructors during the summer program or the second phase. The second phase was the six-week summer institute for the teacher-participants.

Virtually the same opportunities were provided for both the spring and summer groups with a college staff including the director, the associate director, two additional science education specialists and three subject-matter specialists, one each from the biological science, the earth sciences and from the physical sciences. In addition, two early childhood specialists made an important contribution to the program. All of the teaching staff served on a part-time basis during the spring program, and all but the director and the associate director served on a part-time basis during the summer program.

It was decided to limit the program of instruction to six integrative science concepts and to place major emphasis on observation, investigation, inquiry and discovery.

The six major concepts¹ included (a) growth, (b) adaptation (from the life sciences), (c) motions of the earth and sun, (d) relative motion (from the earth sciences), (e) heat and temperature, (f) kinetic molecular theory (from the physical sciences).

In addition to intensive laboratory work and necessary discussion for illuminating and clarifying concepts, unique features of the institute program included (a) producing, viewing in groups, and analyzing kinescopes of science lessons being taught by the supervisors or participants with their own classes of children, (b) designing and scheduling an elaborate evaluation program before, during and after the institute, (c) examining and analyzing elementary school science materials produced by Science Curriculum Improvement Study, Elementary Science Study, and the American Association for the Advancement of Science, and with visiting members from each of the respective projects, (d) working in schools or day-care centers with disadvantaged youth by all participants. All of the summer institute activities were conducted in a school which serves disadvantaged youth.

¹ Specially prepared materials used in these areas are published under the names of Tannenbaum and Stillman by McGraw-Hill Book Company, Inc.

The Evaluation Program

Judging the effectiveness of such a large scale program was deemed to be one of the most important aspects of the institute operation. The plan finally settled upon required pre-institute testing and observing of the teacher-participants followed by post-institute testing and observing of them, making use of the same instruments both before and after the institute activities. An advisory committee on evaluation, consisting of the director, the associate director, and three qualified evaluation experts from two offices of Institutional Research of The City University of New York, decided upon the instruments to be used and the procedures to be followed.

In April and May 1966, a randomly selected sample of future teacher-participants were visited by two staff members from the institute evaluation team. A specially developed observation form had been devised and the evaluation team used this form for recording their findings. Then, each supervisor was asked to use a similar form and record his observations of each of the teachers from his school who intended to participate in the institute.

At the beginning of the institute, a battery of tests on science and science education practices, along with a specially devised modification of the Semantic Differential Test was administered to all participants. At the close of the institute, the same battery of tests was once more administered, and, in addition, each participant was asked to fill in an opinionnaire on the merits, values and shortcomings of the institute.

Some Early Findings

The Hunter College NDEA Institute in Science for Disadvantaged Urban Areas clearly has demonstrated the feasibility of conducting large and intensive training programs for elementary school teachers. It demonstrated, further, that such training can be administered effectively through a cooperative endeavor between college personnel and the supervisors who work directly with teachers in their day-to-day interaction with elementary school pupils if those same supervisors are given a thorough orientation and training program in the kinds of experiences the teachers are expected to provide for their pupils.

A related and unexpected finding from the Hunter program is that much more important than the supervisor's previous background in science is his ability to offer effective leadership for his group. The most successful supervisor-teachers were not those who possessed the best backgrounds in science, based on previous study, but those who were able to establish and maintain the strongest group relationships and attitudes toward discovery throughout the institute.

There is no doubt that both supervisors and teachers learned some science. No doubt, also, they learned many science teaching techniques, and overwhelmingly they have reported feeling much more comfortable about teaching science, an area which previously they had feared and avoided. But the pay-off must be observed in their classrooms. First reports from the evaluation team seem to indicate many more individualized science activities in these classrooms. ↵

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