

Learning about Learning Through Cooperative Research

The college-public school experimental programs described in this article contain both broad and specific implications for learning about learning.

THE Peabody-Public School Cooperative Program, initiated during the summer of 1957 and supported by a grant from The Fund for the Advancement of Education, has as its primary objective an investigation of the ways that skilled teachers can extend the scope of their present influence on the learning activities of pupils.

A Cooperative Research Program

The problems selected for investigation have been proposed and defined within a working relationship established and developed by the staff members of George Peabody College for Teachers and the representatives of the cooperating school systems. These problems represent matters of vital concern to the participating schools, including the shortage of skilled personnel, the physical limitations of educational opportunities within school districts, overcrowding of existing facilities, and more effective use of materials of instruction.

In working toward the solution of these problems the role of the college has been both facilitating and advisory. The resources of Peabody College have been made available to the schools ac-

ording to cooperatively developed plans of action in which the school systems have retained operational control of each project. The requirements of the college have been largely dictated by those factors necessary to an effective evaluation of the experimentation.

Within this framework eight separate research studies were initiated—all designed to improve the quality of learning for selected groups of pupils in the associated schools. Of these eight projects, three will be discussed here as they relate to the learning processes of the pupils affected by the experimentation.

Summer Sessions for Superior Students

During the summer of 1958, ninety-nine Davidson County, Tennessee, high school students were enrolled in specially designed classes of physics, chemistry, and mathematics.¹ Under the leadership of Professors H. Craig Sipe (physics) and John H. Banks (mathematics), outstanding high school teachers of mathe-

¹"Specialized High School Summer Sessions." Research Bulletin Number 6. The Peabody-Public School Cooperative Program. Nashville 5, Tennessee: George Peabody College for Teachers.

matics and science were selected to teach in the summer sessions, and superior students were invited to attend. The instruction was provided in two high school centers, one in the western and one in the eastern part of the county.

Requirements for student eligibility included: (a) completion of the junior year of high school, (b) completion of three years of high school mathematics and two years of science, (c) superior academic achievement and ability, and (d) recommendation by teachers and principals. Instruction included topics in mathematics and science not in the present high school curriculum.

The specific goals of this project were concerned with the extent to which: (a) able secondary teachers could provide this type of instruction, (b) idle facilities and students could be brought together in a fruitful educational enterprise, (c) special curricula could be developed, and (d) students would respond to a challenging educational program without the inducement of credit.

In the course of the evaluation of this project, information was gathered which related directly to the learning processes of the students enrolled.

Students whose attitude questionnaires revealed a high degree of intrinsic motivation performed, in general, better than those whose interest centered on the more remote goal of college success. Chemistry students whose test scores fell in the lowest quartile indicated on attitude questionnaires that their purpose in enrolling was largely to review for college chemistry. A similar relationship was found to exist among the mathematics students. By and large, the poorest work in the mathematics class was done by twelfth grade students whose purpose was related to college preparation. The group that performed best was

composed of six students who had completed the tenth grade and were given special permission to enroll because of high interest and ability.

Test results in the physics of electricity indicated that the students learned facts well but had difficulty in applying facts to the solution of problems. In the laboratory, students quickly developed manipulatory techniques. Consultants and teachers realized that this has important implications for the regular instructional program.

These findings suggest that attempts to develop special learning situations for talented young people should be based on a careful consideration of intrinsic motivational factors.

Team Approaches to College Teaching

Two programs attempted to enrich training experiences of graduate students and increase the productivity and effectiveness of regular professors. These programs were conducted at Peabody College during the 1957-58 academic year under the direction of A. Edwin Anderson, professor of English, and John H. Banks, professor of mathematics.² The programs were designed to develop:

1. A procedure which would assure a better utilization of regular staff resources and specialties to the benefit of a greater number of students.
2. A structure which would be sufficiently adaptable to lend itself to an expanding freshman load without diminution in the quality of instruction.
3. A format for an instructional program designed for the training of instructors of college freshman courses.

These projects yielded data indicating that parts of the instructional program in

²"Team Approaches to College Teaching," Research Bulletin Number 5. The Peabody-Public School Cooperative Program. Nashville 5, Tennessee: George Peabody College for Teachers.

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these disciplines can be presented to large groups of students without sacrificing the quality of learning and instruction. For the freshman English Communication course:

1. Eight classes of approximately 25 freshman English students met for three one-hour classes and one two-hour skills laboratory weekly.

2. Thirty demonstration classes were conducted at intervals throughout the year with units of students ranging from 75 to 100. These classes were taught by the five regular members of the English Communications staff, each member participating where his interest and specialty best suited him.

3. As a corollary to the other experiences of the student-instructors a seminar meeting for two hours weekly throughout the year was devoted to the task of giving these persons precise guidance with their own teaching problems and a critical examination of the operation of the project.

As a result of these experiences each student-instructor prepared an instructor's manual in which were assembled those materials—course descriptions, syllabi, tests, materials, bibliographical lists, text listings, descriptions, evaluations, and similar matter—which he normally would expect to need as he went into a teaching assignment elsewhere.

This program offered a powerful learning experience for the three assistants. The opportunity to try college teaching provided them a chance immediately to apply theories of teaching. The responsibility assumed made the experience realistic, and the supervision and assist-

ance from the regular staff made it especially worthwhile from the standpoint of training. The results obtained during the course of the program were most heartening to both the student instructors and regular staff members, due largely to the fact that teaching and learning were made meaningful and effective through the contributions of instructors where their abilities best qualified them.

That the program was effective for students enrolled in the course was verified by results on the Cooperative English Tests, Effectiveness of Expression and Reading Comprehension, and the Brown-Carlsen Listening Comprehension Test. While students were unanimously in favor of this organization and two-thirds of them rated the demonstration classes and laboratory sessions as valuable or very valuable, they still considered the regular class sessions more important. Both readiness for participating in new patterns of teaching and more effective use of new activities may be needed and are being considered in the extension of the experiment.

Secretarial Help for Classroom Teachers

In Davidson County, Tennessee, instructional secretaries are being used to improve the effectiveness of classroom teachers by relieving them of clerical and routine secretarial duties.³ This is being achieved by recruiting capable married women with secretarial ability who are willing to work a portion of the school day but are not available on a full-time basis.

³ "Secretarial Help for Classroom Teachers." Research Bulletin Number 1. The Peabody-Public School Cooperative Program. Nashville 5, Tennessee: George Peabody College for Teachers.

One secretary is assigned to six teachers to perform a set of prescribed secretarial and clerical tasks usually performed by the teacher. The secretaries are not assistant teachers or classroom helpers. The experiment is designed to test the hypothesis that: Teachers can extend their creative teaching talents to pupils and markedly improve the effectiveness of their teaching when they are freed from the many time consuming, routine clerical and secretarial tasks which they now perform—tasks which someone must perform for each classroom in every well organized school.

Under the direction of Professors Roosevelt Basler and Theodore Woodward, evaluative instruments were designed and used during the first year of the program which yielded data indicating that important changes took place in the classrooms of the teachers thus served.

Among these changes was a marked increase in the amount and variety of instructional materials introduced into the learning situation. With the problem of ordering material simplified, large quantities of exhibits, pamphlets, films, and similar materials began to enter the classrooms of these assisted teachers. With a secretary to complete arrangements, field trips and other community resources were drawn into the field of experience of pupils in these classes.

Tests and practice materials prepared by the secretary for the teacher's use were increasingly aimed at individualizing the instructional processes. The help made available to the teacher seemed to make possible the production of individual assignment and evaluative material in quantities hitherto beyond the range of the teacher's time limitations.

Teacher-designed instructional materials in large quantities were constructed

by secretaries. Arithmetic aids were prepared in sufficient quantity so that every pupil in a class could have his own set. Vocabulary cards for a reading text were mass-produced by a secretary and a complete set placed in each pupil's hands.

Most particularly, this service seemed to promote certain activities that provided for the pupils a strong reinforcement of their learnings. Class newspapers appeared in the rooms of teachers who had not used this activity before. Booklets of pupils' poetry, typed copy of pupils' own stories bound in booklet form and illustrated by the children, and similar materials were seen in increasing frequency.

A conclusive answer to the question—how do these changes in teaching practice affect the learning of children—is not yet available. However, evaluative statements made by classroom teachers who received secretarial help suggest that these changes in procedure do have potent effects on the learner.

Teachers devoted the time saved for them by the secretary's services to individual guidance and instruction. They reported that cases of marginal achievement had responded to this treatment and had made acceptable progress. Such instances were reported by both elementary and high school teachers.

Present evaluation of the continuing project is focused upon the classroom setting and is designed to explore the relationships between the provision of secretarial services and the nature of the learning experience of pupils.

Theory and Application

The experimental program partially described herein contains both broad and specific implications for learning about learning.

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ing at me: Who *are* our potential giants, anyway? Are they exclusively the greatly intelligent?

The question couldn't have come out of anti-intellectualism, because I do believe unequivocally that high intelligence is a resource of untold value. And I'm sure it's not just sentimentality in defense of us common folk, of whom God made so many.

But there is a real, hard-headed question to be asked. As a society we seem to be moving toward a royal-jelly diet for a select few, on the ground that their full development is essential to our progress. That may well be essential—without connoting neglect of the rest. But wisdom in the investment demands the unsilenceable question: Who are to be the chosen ones?

In cold fact, who *are* the kinds of people who get the jobs done that have to be done if we are to survive and prosper? We know, at the very least, that we have problems of moral insight

and moral leadership, of organization and administration, of all the arts, of invention, and of business and finance. *In cold fact*, again, how highly do the actual contributions to each of these correlate with the single variable of intelligence? Even to the extent that they depend upon an intelligent person, to what extent is it his intelligence that does the trick?

We don't know. My common sense observation of the world about me leads me to skepticism. If I were some cosmic banker, contemplating a heavy investment in a chosen few of great potential; or if I were some cosmic human-cattle judge, score card in hand, rating the candidates; if I had to do the scoring, I think I would place intellect as only one heavily weighted item on my score card. I think the question is susceptible of research.

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Learning about Learning

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Each of the projects discussed illustrates one or more principles of learning commonly accepted *in theory* but not always employed in educational practice. In the special high school summer program, students exemplified the power of the individual's drive for knowledge when stimulated by new and intriguing material. The team approach to college teaching released, for the graduate assistant, the tremendously vital and highly individualistic learning capacity of the person deeply involved in a responsible situation. The use of instructional secretaries enabled the capable teacher to muster his resources for instruction in such a manner that greater clarity, exact-

ness and thoroughness characterized classroom teaching. It is within the context of such experimentation that theory comes to life for the administrator and classroom teacher.

Carefully developed and controlled cooperative experimentation by theorists and practitioners can provide insurance against abortive and disillusioning experiences. Furthermore, an adequately manned research staff can provide special assistance in the collection and interpretation of results of classroom experimentation. This working relationship can result in an educational experience for the participants in which the effectiveness of theoretically sound educational planning is demonstrated to the classroom teacher and in which the theorist puts his constructs to empirical test.

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