

1974

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Recommended Citation

Kuennen, S. Cecilia (1974) "A Unique Elementary Science Teacher Education Program," *Iowa Science Teachers Journal*: Vol. 11: No. 4, Article 3.

Available at: <https://scholarworks.uni.edu/istj/vol11/iss4/3>

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A UNIQUE ELEMENTARY SCIENCE TEACHER EDUCATION PROGRAM

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Within the past decade exciting new science programs have become available and have been introduced into the elementary schools. At the same time important changes are taking place in pre-service science education programs on the college level to ensure long-range success in the use of these new curricula.

Briar Cliff College, Sioux City, Iowa, has successfully implemented an innovative pilot program which may well be adopted by other teacher education centers throughout the country. The strength of the program lies in the cooperative effort between the college and the elementary school system.

Through Project ASSIST¹ (Alternatives for Schools of the Seventies for Improvement of Science Teaching), Briar Cliff College was selected to pilot the program in response to a joint proposal submitted by S. Cecilia Kuennen, associate professor and chairman of the Briar Cliff Physics Department, and Lawrence Benne, science coordinator of the Sioux City Community Schools.

Motivated by a concern to provide quality instruction, the program provides for pre-service elementary teachers (sophomores and juniors) to work closely with, and to observe, expert science teachers on each grade level, while concurrently participating in the professional science methods course of the college instructor.

Fourteen students (eleven women, three men) participated in the pilot program for six weeks during the last term of the 1973-74 school year. Students met weekly with the college instructor who coordinated and unified the program. Six in-service science teachers who were selected by the elementary science coordinator of the Sioux City schools served as resource personnel. These teachers, masters in the

¹ Project ASSIST is a federally funded program through which National Science Foundation grants were secured for state-wide improvement of science education in Iowa.

inquiry method of teaching ESS² and well informed in course organization and approaches, each spent one class period at the college discussing the philosophy, concepts, and activities applicable to his grade level. Each emphasized the investigative nature of science. Students were given opportunities to "explore," "try," or "play with" materials. In this way the college students became actively involved with materials that are conceptually rich for the learning of science. The day following each teacher's class with the college students, the students visited the teacher's own classroom to observe first-hand his techniques, interactions, and active involvement with children in science activities. The ten-minute conference between teacher and students which followed proved educationally profitable for questions and answers and for a better understanding on the part of students of the social and emotional aspects of classroom teaching.

Before implementing the program a planning session involving the college instructor, school administrators, and the six teachers enabled each of the teachers to suggest the content areas he desired to cover, the activities he preferred to present, and the accompanying techniques he would employ. Thus the students were exposed to a variety of approaches and types of activities.

Multi-faceted as the program is, it benefits the college student and also is a source of enrichment for the in-service teacher, who has an opportunity to convey his knowledge and experience, which encourages personal professional growth. The generous cooperation of school principals also stimulated faculty enthusiasm in the pilot program. The program likewise generated enthusiasm on the college campus. It provided an opportunity for better communication between educational institutions to achieve common goals. But most important, it developed enthusiasm for science and a feeling of competence in students desiring to become successful elementary science teachers.

Upon completion of the pilot program, cooperative plans were made to continue the program at Briar Cliff College during the following school year. The juniors who participated in the pilot program eagerly anticipate the term when they will do their practice teaching.

Dr. Robert Yager, director of Project ASSIST and the Science Education Center at The University of Iowa, said, "Your program is a vi-

² Elementary Science Study, Education Development Center, Newton, Mass. (materials available from Webster Division, McGraw-Hill Book Co., Manchester, Mo.).

able mechanism to improve pre-service as well as in-service education in the Sioux City community. It will influence other colleges to follow similar cooperative approaches in order to produce more effective elementary teachers.”

ANONYMOUS ADVERTISER BOOSTS SUN POWER

A challenge to use solar energy was thrown in front of readers of the *Wall Street Journal* recently. The medium was a full-page advertisement costing \$9,000 in which the buyer expressed his confidence in American ingenuity which would free all mankind from energy deficits and make the innovator wealthy as well.

“A Challenge to Scientists, Inventors, and Tinkerers,” the ad read.

“Select 11 metal bars.

“Place 10 of them in sunshine.

“These ten will become too hot to hold comfortably.

“Transfer the heat BTU’s from these ten to the cool 11th one, or into an equivalent amount of fluid so that it will become much hotter than any one of the 10.

“Patent your process, and you will have the world by its tail, and vast quantities of solar energy will be just around the corner.

“Theoretically, water will not run uphill; yet a patented device, the hydraulic ram, furnishes water uphill to thousands of homes without any added energy.

“Theoretically the bumblebee cannot fly. How happy he is in his airborne ignorance.

“Theoretically this challenge cannot be successfully met, but . . . Henry Kaiser liked nothing better than the word of an expert that something couldn’t be done.

“History shows that new ideas in science often come from brash youngsters, mavericks, or rank outsiders.

“This challenge is presented by a retired private citizen who hopes it will be a public service; who has complete confidence in the ingenuity of Americans to solve any engineering problem; and who wishes to remain anonymous.”