

A Partnership in Science Education

by

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Introduction

Science education at our institution operates within a network, or partnership, of science educators with a long, rich history. That partnership links the science teachers in the community's schools with the science education faculty of the community's university. And although teachers in the community's schools primarily constitute the network, it also includes model teachers in school districts throughout the state. Such partnerships are probably quite common, so what distinguishes this forty-year old partnership? Our science teachers are master teachers who model in their classrooms the "business" of schooling that is the essence of the teacher education program on campus. In other words, our network of model teachers translates, and practices in their classrooms, constructivist learning theories and learning cycle methodologies that our students (preservice teachers) are studying at the university. Consequently, the network teachers' classrooms and science programs are our "laboratories" for teacher preparation.

Our partnership is a symbiosis where each entity gains greatly through collaborations in teaching, research and service. Many of the science teachers have been or are participants in 1) joint grant projects, 2) collaborative research studies and presentations, 3) youth academies and inservice institutes, 4) adjunct teaching in science education at the university and/or 5) graduate studies in science education at the university. But perhaps the best exemplar of our symbiotic relationship is the process of placing, or 'matching', student teachers with cooperating teachers for the science teaching internship.

The Partnership at Work

Internship, or student teaching, is the single most important experience when preparing to become a science teacher. Therefore the process of placing interns for this experience is acutely important. At my institution we begin the process of student teacher placement in science education with an "interview". A prospective intern makes an appointment for an interview with the university's science education faculty for the purpose of identifying an appropriate student teaching site in the area schools. During the interview many placement factors are considered in this initial phase of student teacher placement.

Key factors negotiated by the prospective intern and science education professor include:

- Grade levels (6-8 middle schools, 7-9 junior high schools, 9-12 or 10-12 high schools);
- Science disciplines (general science, physical science, biology, chemistry, physics, earth science, advanced electives in science);
- Previous field experiences completed by the intern (rural, urban, suburban schools);
- Characteristics of the cooperating teachers (years of teaching experience, number of preparations, club sponsorships, extracurricular assignments).

After a thorough discussion of these factors, a potential site, or cooperating teacher, is identified and the prospective student teacher then schedules an “interview” with this “select” cooperating teacher. *All cooperating teachers for science education are screened and selected to include those individuals--master teachers--whose teaching philosophy and practices are consistent with the theory base of the university’s science teacher preparation program.* Also, the institution’s science certification committee has sanctioned these science teachers.

Matching Student Teacher and Cooperating Teacher

The interview between the prospective student teacher and cooperating teacher is key in the process of matching intern with teacher. It is an early opportunity to meet one another and determine philosophical and pedagogical compatibility. Therefore placement interviews serve as a forum for the cooperating teacher, science education faculty and prospective student teacher to determine if there exists a match between the cooperating teacher and student teacher. [Final placement of student teachers is contingent upon signed approvals from cooperating teachers and science education faculty who are the university supervisors during the internship.] Our procedures for matching student teachers with cooperating teachers allow for the primary role of mentoring and evaluation be placed with the cooperating teachers. The university supervisor’s role, therefore is 1) essential during the placement process and 2) supportive/evaluative during student teaching.

The procedures we follow for matching interns and cooperating teachers is front-end loaded. Each student teacher and university supervisor interacts many times during the placement process, which is completed the semester prior to student teaching. Prospective student teachers and science education faculty (university supervisors) meet at least twice prior to student teaching. Next, during the first two weeks of the student teaching semester, the university supervisor visits every student teaching site to confirm placement matches. Of course throughout the semester, the university supervisor visits, observes and mentors each student teacher. Also, seminars are held throughout the semester and are conducted at the interns’ various school sites so that they can visit each other’s schools and classrooms.

And so...

Science education faculty at our university work closely and continuously with science teachers and administrators in local and area school districts to place, mentor and supervise student teachers. The network or partnership that has been established over the past 40 years is the key to our success in this process. Without the common goals and theory base for science teaching, we would never be able to accomplish what we do during science teacher preparation. The result is well prepared teachers operating from a theory base for successful science teaching.

About the author...

Edmund A. Marek holds the rank of Full Professor and is Director of the Science Education Center. This is his 21st year as a faculty member at the University of Oklahoma (OU). He began his teaching career as a secondary school science teacher, and after, an Assistant Professor of Biology at Southwest Texas State University (SWT) in San Marcos, Texas.

Dr. Marek is very active in the National Association for Research in Science Teaching, the National Science Teachers Association, and the Oklahoma Science Teachers Association. He is the author of over seventy publications on science teaching and has published two teacher's guides for middle school environmental science, two college laboratory manuals for general science, and two college textbooks on elementary school science teaching. Dr. Marek has also received several awards for teaching and research, and in 1993 was awarded the Henry Daniel Rinsland Award for Excellence in Educational Research.