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# The Logical Link Between Career Ladders and Teacher Education

A collaboration among five public school systems, a corporation, and a university has created a program that recruits and prepares prospective teachers while expanding their options in the private sector.

Colleges and universities that prepare teachers need to be partners at the tables where teacher career ladders are being developed. They have a major stake in the successful development of career ladders, partly because the promise of options has a major impact on teacher education recruitment efforts, partly because the teacher education curriculum needs to reflect potential future roles graduates may play, and particularly because the quality of teacher education increasingly depends on the substantial and systematic inclusion of practicing teachers as teacher educators. Colleges and universities have a significant self-interest in developing career ladders and represent an important potential resource to state and local education agencies that attempt to develop a comprehensive array of professional options for experienced teachers. Several rungs on any career ladder plan link logically and necessarily with teacher education.

The Math/English/Science/Technology Education Project illustrates the potential of the career ladder-teacher education link in one teacher education program. It was developed collaboratively by five public school systems, Digital Equipment Corporation, and the University of Massachusetts at Amherst. The program—which prepares secondary mathematics, science, and English teachers in a 15-month M.Ed. curriculum—has two explicit goals: (1) recruiting and preparing outstanding prospective teachers for teaching and related career options and (2) creating program-related career options for experienced teachers in participating school systems.

## Program Overview

A basic assumption behind the design is that candidates would not choose to participate unless the program could explicitly demonstrate a capacity to foster, rather than limit, their career options. The initial target group included approximately 20 prospective math and science teachers at the secondary level.

Having met its recruitment goals,[1] the program has focused a significant portion of its curriculum on the career options agenda and has, in effect, created rungs on teacher career ladders in participating school systems.

Figure 1 summarizes major elements of the program, two of which stand out. First, nearly one-third of the program's courses and experiences are directly related to preparing candidates not only for teaching, but also for future additional responsibilities and opportunities. Second, the vast majority of candidates' time in the program is guided and supervised not by university faculty, but by practicing teachers, whose roles are formally described and compensated.

## Career Opportunities

The program's recruitment literature claims that project graduates will "earn certification to teach math or science, gain knowledge and valuable

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experience during a corporate internship, and expand career options based on continuing relationships with the private sector, the public schools, and the University of Massachusetts." One career ladder option built into the project from the start is the guarantee of part-time employment by Digital's Education Services Division for three years after graduation, with the sole contingency that candidates are concurrently teaching. Other options projected over time include developing curriculum, supervising or providing staff development, teaching adults and prospective teachers, or participating in school-university-industry research and development consortiums, particularly as they relate to educational applications of new technologies. Within a graduate teacher preparation program with a primary purpose of training solid beginning teachers, the skills and knowledge associated with all or several of these possible roles cannot be developed. Instead, emphasis is on expanding each individual's experience, knowledge, critical judgment, and skills in the educational application of current and emerging technological hardware and software.

This emphasis serves three purposes. First, it is an appropriate inclusion in a contemporary preservice program for beginning teachers. Second, it increases the probability that graduates will be valued in their continuing relationship with Digital. Third, and most important, it equips graduates with a knowledge base that their school systems and others may want to tap in the future, thus providing graduates with a foundation for pursuing teaching-related career options.[2] More recently, it has also become apparent that graduates are valued for having spent intensive time working in the private, for-profit sector because they are able, or assumed to be able, to communicate to high school students some of the norms, expectations, and benefits of working in the private sector.

Four program components contribute to the technology goal:

*Admissions*. In addition to being required to have undergraduate academic records that qualify them for graduate study in their disciplines, and having to successfully interview with school system and business personnel, candidates are expected to have competence in at least one computer programming language.

*Microcomputer Access*. Digital has given the university personal computers that are loaned to each candidate for the period of the program.

*Internship in Digital's Education Services Division*. Each intern spends almost five months as a supervised full-time professional working in Digital's "college." Most of the interns' supervisors are former public school teachers. Interns work on teams. Job assignments include developing curriculum, preparing teaching-related graphics, creating and summarizing course evaluations, and writing reports.

*Courses*. The university contracts with three senior-level Ed.D. or Ph.D. employees at Digital to teach a course, concurrent with the industry internship, on the history and potential of computers for education. During the second summer, two of the four courses are devoted entirely to the assessment and development of hard-

**Figure 1. Major Elements of the Math/English/Science/Technology Education Project**

| June | July–August | Fall Semester | Spring Semester | July–August |
|---|---|---|---|---|
| At the University campus | At a collaborating school system's summer school | At a collaborating school | At Digital Equipment Corporation | At collaborating school system's summer school |
| Directed observation in local schools. | Practice teaching in teams, with mentors and junior and senior high school students. | Full-time paid teaching internship in a collaborating secondary school. | Full-time paid internship in Digital's Education Services Division. | Two lab-oriented graduate courses related to assessing and developing educational software. |
| Start course work related to teaching and certification. | Planning and evaluating with mentors. | Regular meetings with support teacher and University supervisor. | Regular meetings with Digital supervisor and program coordinator. | Two courses to complete certification requirements. |
| Microteaching | University course work related to teaching and certification. | Weekly teaching seminar. | Weekly course on computers, technology, and evaluation. | Assist with induction of new group of candidates. |

ware and software for use in public schools.

When students graduate, we know they have more experience, and have spent more time grappling with issues of appropriate educational applications of technology, than all but a handful of experienced teachers. We know they can use this base to get summer employment with Digital for three years if they are teaching. We are only starting to learn whether school systems and others will tap their knowledge in ways that fulfill our intent that they will have options, while teaching, to expand their responsibilities, earning power, and impact.

## Career Ladder Rungs for Experienced Teachers

The Math/English/Science/Technology Education Project cannot operate without the heavy involvement of experienced teachers. While all teacher education programs rely to some extent on teacher-supervised clinical work, arrangements are often so informal and unrewarded that they can scarcely be taken seriously as teacher career ladder options. This program, with its explicit goal of fostering options for teachers, and with financial help from the Bay State Skills Corporation,[3] has attempted to make participation of teachers from collaborating school systems more formal and attractive.

In the 1984–85 academic year, the program employed one classroom teacher for every intern in the Project (n=24) to perform any one of the following four roles:

*Part-time faculty* (n=6) are employed to teach one or more graduate level courses; are given Visiting Lecturer or Visiting Professor appointments; and are paid in the $2,000–4,000 range, depending on experience, qualifications, and the complexity of responsibilities. Selection is made by the university in consultation with school and industry personnel. Substantial completion of advanced graduate work is required.

*Mentors* (n=5), recognized excellent classroom teachers, are the backbone of the initial summer of the program, which is designed to provide interns with enough teaching skill to be able to assume full teaching responsibility in the following fall. Mentors are nominated by their school

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systems and hired jointly by the school system running the summer school and the university. Each mentor is responsible for a group of secondary students in the summer school and for the clinical training of a team of four or five interns during the eight-week summer session. Mentors attend a two-day orientation at the university, where they are given some exposure to concepts of clinical supervision. During the 1984–85 year, mentors earned approximately $6,000, one-third from the summer school and two-thirds from the university, above their regular teaching salaries.

*Support Teachers* (n=12) are designated by the school that hires interns, subject to university review. They are full-time teachers, frequently department heads, charged with assisting and supervising project candidates during the school internships. They also communicate and coordinate with the university's campus-based supervisor and share responsibility with that person for deciding whether or not a candidate will be recommended for teaching certification. Support teachers currently earn $2,000 per year for supervising one intern during each of two semesters.

*The Summer School Director* (n=1) is a teacher hired and provided released time by the school system sponsoring the summer secondary school to plan, staff, and administer the program for junior and senior high school students. The director is concurrently hired by the university to administer the program's summer session in coordination with the university's program director. The director earns approximately one-third on top of his regular teaching salary, about half of which comes from the university.

From the perspective of the university, the program is not only more effective with, but also dependent upon, the active involvement of the teachers. From the perspective of the teachers, participation is an opportunity to expand responsibilities, extend professional expertise, and increase income while remaining in the classroom. Finally, from the perspective of participating school systems, the program represents one more resource through which quality teachers can be recognized and encouraged to remain in the classroom.

### Constraints on Career Ladder-Teacher Education Initiatives

Educators who wish to build on our experience to design other potential teacher education-career ladder linkages need to overcome two hurdles. The first is the willingness and capacity of two quite different institutions—schools and universities—to genuinely collaborate. The second is the ability of higher education, with partners, to compete successfully for the dollars necessary to engage seriously in a professional process of teacher education.

There is increasing evidence that the first hurdle can be overcome. Partnerships exist and are working. Just as universities have discovered the connection between their own self-interests and the success of the public schools, so, too, have the schools, their governing boards, and the private sector recognized the need to intervene and participate in shaping the next generation of teachers and schools.

The second hurdle, money, is more problematic. Teacher education has historically been underfunded when compared with other areas of professional preparation. This underfunding has led to what might be described as a parasitic relationship between teacher preparation institutions and the public schools upon which teacher preparation depends. In 1984–85, the Math/English/Science/Technology Education Project, with only 24 students, had over $60,000 to use to employ teachers as part of the training staff. This budget, a result of strong arguments made jointly by university, public school, and industry partners—and a result of the responsiveness of the university president, campus chancellor, school of education dean, and the Bay State Skills Corporation—made the teacher education-career ladder links real. It may be unrealistic to expect an additional $3,000 per trainee per year allocation for teacher education, but the link with career ladders strengthens the argument immensely. The reverse is also true.

When advocates for increased teacher salaries, merit pay, career ladders, differentiated staffing, master teacher plans, and renewal in teacher education come together and articulate the intersections of their interests and the savings and synergy that can result, effective resource plans and appeals are probable.

## In Summary

Any effective process of teacher education depends on the significant participation of practicing teachers. This participation can and should take a variety of forms. Those planning career ladders, whether in school systems or state education agencies, will be served well by including teacher education representatives in the planning process. Each party has needs and resources to bring to the other. All parties can lobby to meet their needs more effectively together than in isolation from one another.□

[1]The 1983–84 and 1984–85 candidate groups all had Bachelor's degrees with majors in math, science, or English. Mean grade point averages exceeded 3.3. Mean Gradute Record Exam scores were at about the 80th percentile. All candidates were admitted only after interviews with and endorsement by school, industry, and university personnel. Program recruitment is discussed by Richard Clark and others in "Recruiting Talent into Public School Teaching: An Analysis from One Successful Program" the November-December 1984 issue of the *Journal of Teacher Education*, pp. 2–4.

[2]The following ad for a computer resource teacher at Scarsdale High School appeared in *Education Week* (May 8, 1985). It illustrates one type of option for which the project aims to prepare its graduates:

Combine teaching of computer programming and computer literacy classes with serving as a resource person to other teachers, both those who are teaching computer courses and those who are making use of computer applications in their subjects.

Must have extensive knowledge of instructional computers, hardware and software; knowledge of uses of computer technology across the curriculum; New York State certification as a secondary teacher.

This position offers a stimulating environment, talented staff and an able student body, as well as a salary range of $32,016-$43,967 and outstanding benefits.

[3]During the 1984–85 school year, the Bay State Skills Corporation awarded $95,000 to the project. Approximately half of this award was designed to involve outstanding practitioners as training staff.

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