

COMMUNITY COLLEGE PERSPECTIVES ON TEACHER PREPARATION IN VIRGINIA

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The need for future teachers who are well versed in mathematics and science will not be provided by Virginia's four-year institutions alone. A large portion of those students who complete their K-8 teacher preparation programs at Virginia's four-year institutions have studied a significant portion, if not all, of their mathematics and science at community colleges. Therefore, if future teachers are to have completed appropriate mathematics and science courses these must be provided by the community colleges. In addition, community colleges can play a critical role in attracting people with a high potential for becoming excellent teachers. Two-year colleges are located in urban and rural areas, enroll a large portion of Virginia's minority students, and welcome returning adults. We need to attract students from this source if we are to produce sufficient numbers of well prepared teachers in Virginia. A recent National Science Foundation workshop developed detailed recommendations concerning the role of two-year colleges. This paper will focus on these recommendations.

Nationwide, community colleges have significant enrollments, tremendous diversity, and experienced faculty who are committed to teaching excellence. Community colleges are well positioned to provide leadership in teacher preparation and must work with four-year schools to recruit and train the best and brightest students into the teaching profession.

Historic Perspective

The oldest two-year college in the United States was founded in 1901 in Chicago, by William Rainey Harper, President of the University of Chicago. In 1947, the Truman Commission Report defined the term "community college" and the mission of the two-year school. The community college would charge little or no tuition, serve as a cultural center, be comprehensive in offerings, and serve the area in which it was located [1]. In other words, the community college would provide area citizens with an excellent, well rounded, low-cost education. Throughout the nation, community colleges have successfully provided these same services for ninety-eight years.

National Need

In *President Clinton's Call to Action for American Education in the 21st Century, Talented Teachers in Every Classroom*, the President states that in the next ten years we will need to hire two million new public school teachers due to massive retirements and growing student enrollments [2]. A teacher shortage already exists within the minority ranks. Minority faculty represent fourteen percent of the K-12 teaching faculty nationwide, while more than thirty-two percent of the students in the K-12 system are minority [3]. In addition to the growing teacher shortage, the quality of science and mathematics textbooks, and teaching quality in United States public school systems, compound the problem as presented in *A Splintered Vision: An Investigation of U. S. Science and Mathematics Education*, from the Third International Mathematics and Science Study (TIMSS) [4]. This report warned that mathematics and science curricula, textbooks, and teaching in the United States are *a mile wide and an inch deep*. In 1998, the poor test results of our high school seniors on TIMSS testing, compared to other countries, was reported [5]. The teacher shortage data considered along with the warning from *A Splintered Vision*, and the poor performance of our high school seniors on TIMSS tests strongly suggests that the United States public school system is in crisis.

Community College Resources

The American Association of Community colleges reports that 1,123 colleges enroll 45% of all United States undergraduates. Their student profiles reveal that 42% of all African Americans, 55% percent of all Hispanic Americans, 40% of all Asian/Pacific Islanders and 50% of all Native Americans in higher education are enrolled at community colleges [6]. Community colleges, strategically located throughout the country, with their large, diverse student body and a faculty committed to teaching, must join with four-year schools to recruit and produce the teachers that will enter classrooms in the United States in the next ten years.

National Conference

The tremendous resources of our nation's community colleges have been highly underutilized in the area of teacher preparation. In an effort to highlight the ongoing, successful role of community colleges in teacher preparation, the Division of Undergraduate Education of the National Science Foundation (NSF) sponsored the national conference, *The Integral Role of the Two-Year College in the Science and Mathematics Preparation of Prospective*

Teachers. Eleven community colleges with exemplary activities in science and mathematics for prospective teachers, were selected through a national competition, to be showcased and studied during the conference. Community colleges selected as having exemplary activities included: Austin Community College, Borough of Manhattan Community College, College of San Mateo, Community College of Philadelphia, Delaware Technical and Community College, Grand Rapids Community College, Green River Community College, Henry Ford Community College, J. Sargeant Reynolds Community College, Tulsa Community College and William Rainey Harper Community College. Detailed descriptions of these exemplary programs were published in a special issue of *The Journal of Mathematics and Science: Collaborative Explorations* [7].

More than one hundred individuals including science and mathematics faculty, college presidents and other administrators, as well as national leaders in science and mathematics professional societies participated in this conference.

National Recommendations

Participants worked at this conference to better understand the role of the community college in teacher preparation and to formulate national recommendations on how to best utilize the resources of the community college to produce teachers well prepared to teach science, mathematics, engineering, and technology. The areas of teacher preparation included in the formulation of the recommendations were:

- 1) recruitment of prospective teachers
 - 2) strengthening undergraduate science, mathematics, engineering, and technology courses
 - 3) pre-teaching experiences
 - 4) in-service activities
 - 5) liaisons between two-year colleges and four-year institutions
 - 6) connections with business and industry, professional societies, and other organizations.
- These recommendations were published as a report from the National Science Foundation Workshop, *Investing in Tomorrow's Teachers: The Integral Role of Two-Year Colleges in the Science and Mathematics Preparation of Prospective Teachers* [7].

Call to Action

This report calls upon community colleges to use their large and diverse student bodies

for the active recruitment of prospective teachers from their service areas, providing classroom teachers who will best understand the needs of these communities [8]. Two-year college faculty are called upon to use their expertise in providing quality instruction in introductory freshman and sophomore courses and to demonstrate leadership in strengthening science, mathematics, engineering, and technology courses taken by prospective teachers at the community college. Community colleges must provide the prospective teacher with pre-teaching experiences. An introduction to early, rich, and varied pre-teaching experiences in science, mathematics, engineering, and technology at the community college will reinforce both an interest in and commitment to excellence in teaching. Two-year colleges are encouraged to provide current teachers with in-service training in science, mathematics, engineering, and technology courses. The two-year college working with local school systems may serve as the primary provider of in-service programs in rural areas [8].

It was recognized at this conference that the role of the community college in teacher preparation must be carefully coordinated with four-year institutions, particularly in light of articulation agreements and transfer policies. In order to provide mutual support for the prospective teacher at both institutions, the two-year and four-year schools must work together to align and strengthen science, mathematics, engineering, and technology courses. Additionally, liaisons between two-year schools, business and industry, professional societies, state legislatures, statewide and national policy boards, and four-year institutions will allow two-year colleges to become full partners in the science, mathematics, engineering, and technology preparation of future teachers [8].

I am pleased to report that in Virginia, community colleges are beginning to take their role in the preparation of teachers very seriously. For example, J. Sargeant Reynolds Community College is working very closely with Virginia Commonwealth University to recruit and prepare future teachers. The Chancellor of the Virginia Community College System (VCCS), Dr. Arnold Oliver, is forming a statewide community college task force to study the issues of teacher preparation. This task force will recommend how the resources of Virginia's twenty-three community colleges can best be utilized to help prepare highly qualified K-12 teachers. The VCCS, as well as professional organizations in the state of Virginia are committed to taking steps to raise the level of awareness to the importance of teacher preparation. ■

References

- [1] *Significant Historical Events in the Development of the Community College*, American Association of Community Colleges, Internet: <http://www.aacc.nche.edu/allaboutcc/historicevents.htm>
- [2] *President Clinton's Call to Action for American Education in the 21st Century*, U. S. Department of Education, February 1997, Internet: <http://www.edgov/updates/PresEDPPPlan/part1.html>
- [3] *Promising Practices: New Ways to Improve Teacher Quality*, U. S. Department of Education, September 1998, Internet: <http://www.ed.gov/pubs/PromPractice/index.html>
- [4] W. Schmidt, C. McKnight, and S. A. Raizen, *A Splintered Vision: An Investigation of U.S. Science and Mathematics Education, Executive Summary*, Internet: <http://ustimss.msu.edu/spltdvn.html>
- [5] *Mathematics and Science Achievement in Final Year of Secondary School: IEA's Third International Mathematics and Science Report*, February 1998, Internet: <http://www.csteep.bc.edu/TIMSS1/Achievement.html>
- [6] *Community College Snapshots*, American Association of Community Colleges, Internet: <http://www.aacc.nche.edu/allaboutcc/snapshot.htm>
- [7] "The Integral Role of the Two-Year College in the Science and Mathematics Preparation of Prospective Teachers" (NSF-sponsored Conference), *The Journal of Mathematics and Science: Collaborative Explorations* 1 (2) 1998.
- [8] *Investing in Tomorrow's Teachers: The Integral Role of Two-Year Colleges in the Science and Mathematics Preparation of Prospective Teachers*, Division of Undergraduate Education, Directorate for Education and Human Resources, National Science Foundation, 1998.