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Carnegie Challenge

Higher Education's Challenge: New Teacher Education Models for a New Century

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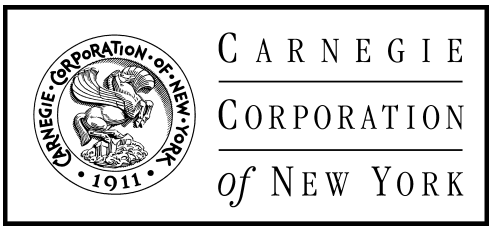

Carnegie Corporation of New York was created by Andrew Carnegie in 1911 to promote "the advancement and diffusion of knowledge and understanding." Under Carnegie's will, grants must benefit the people of the United States, although up to 7.4 percent of the funds may be used for the same purpose in countries that are or have been members of the British Commonwealth, with a current emphasis on sub-Saharan Africa. As a grantmaking foundation, the Corporation seeks to carry out Carnegie's vision of philanthropy, which he said should aim "to do real and permanent good in this world." Currently, the foundation focuses its work in four program areas: Education, International Peace and Security, International Development and Special Projects, which emphasizes "citizenship for the 21st century."

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Any citizen who has ever lobbied high government officials in Washington, D.C., for a worthy cause—without success—will relive that moment of rejection in Robert Coles' luminous book, *Lives of Moral Leaders*. Dr. Coles describes how he and a group of fellow physicians have spent a stress-filled day in 1967 urgently making a case that appears to them to be morally unassailable: namely, that the government has a responsibility to act on behalf of American children suffering from chronic malnutrition and afflicted with an array of diseases—including scurvy, rickets, and beriberi—more often associated with third world countries. Using the data they gathered from their field work with children in the Mississippi Delta, the distinguished group of physicians present their arguments. At the end of the day, to their horror, they realize that they have failed to make their case. Nothing is changed. Dispirited and exhausted, the group head for home.

Literally packing their bags, Dr. Coles and Dr. Milton J. E. Senn, pediatrician and head of the Yale Child Study Center, are summoned to a last-minute meeting with New York Senator Robert Kennedy, which they agree to attend somewhat reluctantly. Aware of the miserable day they have had, Senator Kennedy nonetheless pointedly asks "what next?" Dr. Senn replies "We've done all we can do." After a long, excruciating silence, Kennedy says, "I think we can do a little more." And with Kennedy's help, a plan for action begins to evolve. Their subsequent "plan for action," avers Dr. Coles, "decisively influenced the eventual shaping of a food stamps program for poor families."

The lesson learned that day, according to Robert Coles, is that there are moments in time when the ultimate test of moral leadership is the ability to move decisively and effectively from "argument to action."

Carnegie Corporation of New York has identified the current crisis in teacher education as such a moment in time and is prepared to support a major, positive intervention in the standard route to teacher certification resulting in the design of new teacher education models. According to the U.S. Department of Education, in the next decade, the nation will hire 2.5 million teachers—a number that may increase if politicians deliver on their election promise of smaller classes! The stakes in successfully meeting this challenge are very high. In the view of Vartan Gregorian, president of the Corporation, "Teachers—their education, their knowledge, and their experience—are essential in insuring the future for our society. Teaching is the noblest of noble professions. After all, it is to our teachers that we trust our most valuable 'possessions'—our children, hence our future."

The Importance of Good Teaching. Abundant research is now available to confirm what anecdotal evidence and common sense have suggested was true all along: good teaching is the single most important element in determining student achievement. In a recent study (Sanders & Rivers,

1996), data from Tennessee show clearly that two second-graders, equally matched in terms of math achievement but subsequently taught by different teachers, can, by the time they reach the fifth grade, be separated by as many as 50 percentile points, with one child finding herself in a program for gifted students and the other in a remedial program. The reason? "There is only one variable that can persuasively explain the large systematic difference in student achievement," says Daniel Fallon, Carnegie Corporation's chair of the education division, "and it is the quality of the teacher."

The Tennessee data were compiled on the basis of millions of student records over a period of ten years. These results have been confirmed by studies done in Texas public schools (Kain, 1998; Rivkin, Hanushek & Kain, 1998) and by studies in Boston (Boston Public Schools, 1998).

Quality teachers make the difference in insuring student success, and daily we are reminded that such teachers are in short supply. Consider the following:

• The Third International Math and Science Study-Repeat—conducted four years after American fourth-graders scored high on an international math and science test showed that the students, now eighth-graders, were no longer performing as well. As recently reported in *The New York Times*, "The study showed that teachers in nations whose students scored higher in math and science tended to spend more time on professional development and refining curriculums." Part of the problem, observed Lee Stiff, president of the Council of Teachers of Mathematics, is that middle schools, instead of requiring majors in math and sciences, often require "teachers to have general education degrees, since that gives administrators flexibility in assigning teachers to a greater variety of classrooms." He added, "To have the dramatic gains we'd like, we have to do something dramatic in terms of what it means to be a teacher in America."

• Another recent *New York Times* article reports equally discouraging news: "In his latest attempt to meet a court order barring the hiring of uncertified teachers at New York City's lowest-performing schools, Chancellor Harold O. Levy will immediately expand a fledgling program that offers novices a crash course in teaching, and grants them an alternative form of certification."

• Teach for America, a 10-year national volunteer effort, has recruited and placed nearly 6,500 of the nation's best and brightest—and most idealistic—college graduates in classrooms in many of the country's most impoverished communities. Preparation for the young teaching corps volunteers, who must commit to a minimum of two years of service, consists of a five-week "boot camp," comprised of lectures and discussion and a teaching practicum. Teach for America has successfully raised $76 million from foundations, corporations, individuals, and government grants to support its activities.

Reports such as these illustrate the depth and magnitude of the current crisis in teacher education. "Crash courses" in teacher education and volunteer efforts that rely on teacher education "boot camps" only serve to underscore the urgent and poignant nature of the crisis. What is needed, says Dr.Gregorian, is nothing less than "the reprofessionalization of teaching"—a national effort to meet a national challenge. "To raise the quality of our nation's teaching force is crucial to the success of our public schools, all schools, hence our youth, hence the future of our society and democracy. . . It is foolish to talk about high standards for students when their own teachers may often not meet the same high standards." Clearly, what is needed is a major intervention to recruit, prepare, and retain professional teachers.

Where the Remedy Lies. While the question of how we are to meet the nation's teacher education crisis may still not have risen to the level of consensus, where we are to look for such a remedy is abundantly clear: all teachers have college degrees, and American colleges and universities are where teachers are educated and trained. Thus the locus of responsibility for improving teacher preparation lies with our institutions of higher education. Forging a new partnership, arts and sciences faculty and teacher education faculty—and the provosts, trustees, and campus chief executives representing both sets of institutions—must make effective teacher preparation their most essential, core mission.

"We need university leaders to commit themselves to high-quality programs," says Linda Darling-Hammond, Charles E. Ducommun Professor of Education at Stanford University, who served as executive director of the National Commission on Teaching & America's Future, a 1996 Corporation grantee. "This is a moral crusade," she explains, since, "teaching is the profession upon which all professions rest." Pointing out that there is substantial "consensus at the rhetorical level, but no consensus at the policy level," Dr. Darling-Hammond stresses that commitment to teacher preparation "must be viewed as high status by the [university] leadership" on both sides of the higher educational divide.

The 1999 report of the American Council on Education Presidents' Task Force on Teacher Education, another Corporation grantee, concludes: "For if the teachers we prepare are less prepared than they should be, and the schools fail, colleges and universities will be drained of their very life-blood—high-achieving, well-prepared entering college students."

Well-prepared teachers serve the interests of all segments of our society—no less so higher education's.

Effective Teaching: Knowing It When We See It. It is an article of faith: We know good teaching when we see it, much as anyone who has ever listened to Pablo Casals perform Bach's "Suites for Unaccompanied Cello" knows that Mr. Casals was a great cellist.

In much the same way, students at Garfield High School in East Los Angeles, having the good fortune to be students in Jaime Escalante's Advanced Placement (AP) Calculus class, knew beyond question that they were in the presence of a great teacher. Undeterred by the poverty, drugs, gangs, and other evidence of socioeconomic misery that afflicted students at Garfield High School, Escalante succeeded in helping his students to learn college-level calculus and, significantly, also helped them to achieve a profound and precious sense of self-worth. Escalante and his students demonstrated to themselves and to each other that together they could indeed "stand and deliver" as the book and movie which tell their story attested.

How and why did Escalante succeed? Indeed, what is one to make of a calculus teacher who uses basketball shots—the "sky hook" and "jump three pointer," for example—as metaphors to describe and differentiate mathematical phenomena? Certainly it is an inspired teacher who is able to capitalize on his students' knowledge and enthusiasm for basketball who can lead them to discover that the equation $y=ax^2$ is a mathematical way to describe a parabola. But is Escalante's teaching simply a tour de force, brilliant but beyond replication? Unquestionably, like all great talents, Escalante's is a one-of-a-kind phenomenon, but upon closer examination, we are able to break down his performance into discrete, identifiable elements. On the basis of available research, we know that not only are these elements prerequisite to effective teaching—they are subject to replication.

On the basis of this research we now know that an effective teacher must have an undisputed mastery of:

- **Subject matter**. Middle and secondary school teachers must have a major in an academic content area. According to the National Center for Education Statistics, approximately 30 percent of teachers are teaching academic subjects without either a major or minor in that subject; in impoverished schools, where a shortage of science teachers is more acutely felt, this figure rises to 40 percent As for elementary teachers, it is generally agreed that their training needs to be strengthened to include more preparation in reading, mathematics, and science.

- **General knowledge of pedagogy.** An effective teacher must have a sound grounding in learning theory, classroom management, and curriculum and instruction.

- **Pedagogical content knowledge.** The effective teacher must know how to represent and formulate the subject in ways that make the subject understandable to the student.

- **Knowledge of student context.** Well-prepared teachers must know and understand their students' specific contexts, e.g., their community, district, and school, and must be familiar with their personal interests, beliefs, and concerns as well.

• **A repertoire of metaphors.** As Escalante did with notable success, the effective teacher must develop a set of metaphorical bridges between the teacher's subject knowledge and the implicit understandings brought to the classroom by the learner.

• **External evaluation of learning.** An objective measure to monitor, gauge, and evaluate endpoint learning is essential in assessing a teacher's competence. Escalante used the Advanced Placement Examinations.

• **Clinical training**. Effective teaching requires supervised practice and/or mentoring that follows teacher certification for at least two years.

• **Technological training.** Teachers need more than a few courses focused on hardware or surveys of educational software; rather they require training that incorporates technology into the curriculum—and allows time for teachers to experiment with new technologies and to participate in relevant professional development activities.

There is growing consensus about what the nature of effective teaching is, and there are increasing signs that the will and determination to fashion new teacher education models are reaching a critical mass. The efforts of the National Commission on Teaching & America's Future; the American Council on Education Presidents' Task Force on Teacher Education; the K-16 Teacher Education Task Force report of the American Federation of Teachers; and the recent series of conferences on teacher quality sponsored by the U.S. Department of Education which enlisted participation of interested parties—including college and university presidents, K-12 educators and school district administrators, business and community leaders, and teachers union representatives—have all focused intensively on developing action plans for the recruitment and preparation of effective teachers.

In the face of such efforts, says Dr. Gregorian, "We are learning an important lesson—that what an institution cannot accomplish alone it must undertake in collaboration with other interested people and groups."

Public interest in the teacher education crisis is likely to intensify. Through Title II of the Reauthorization of the Higher Education Act of 1998, the federal government is now required to report publicly the rates of passing teacher licensure examinations by all colleges and universities that receive federal aid. The pass rates of teacher candidates must be published by the secretary of education, disaggregated to identify and rank all institutions of higher education in every state.

With the future of every child in America at stake, the dialogue on teaching and accountability is being conducted around kitchen tables and on editorial pages throughout the nation. The American public, along with the distinguished task forces of academic experts and the U.S. Department of Education, wants to know: Are we ready to translate argument into action?

Meeting the Challenge. American higher education has for so long been viewed as an instrument for shaping the nation's future and for insuring individual mobility that it is easy to forget that colonial America's first colleges were designed as practical training schools for ministers. The proliferation of colonial colleges (beginning with Harvard), was dubbed by Frederick Rudolf in his classic history, *The American College and University,* as "this planting of temples of piety and intellect in the wilderness."

Even as American higher education began to focus on the practical realities of building a nation, the preparation of teachers still experienced a marginalized status in the culture of American higher education. The organization of the first normal schools in the mid-nineteenth century were at the high school level and were largely attended by women. Teachers colleges, an outgrowth of the normal schools, never attained the same high status of their liberal arts institutional siblings—nor have they yet. American universities continue to be rewarded for research and scholarship, not for their involvement in teacher preparation, and schools of education largely continue to function in not-so-splendid isolation.

A viable action plan for designing new teacher education models must start from the clear proposition that such a state of affairs in higher education can no longer be tolerated and that the interests of our children and our nation's future must supersede all others. Such a plan must address the following as organizing principles:

- Arts and sciences faculty and education faculty must form active partnerships, committing their respective knowledge and resources—and above all their moral resolve—to designing teacher education models that will produce the highest quality teachers.

- University chief executives and provosts must develop university-wide policies that will insure that such partnerships are enjoined, supported, and monitored. Reporting lines to the provost or university chief executive must be established to bridge real or imagined barriers between the faculties.

- Higher education institutions must expand these partnerships to include involvement in the local school districts and K-12 schools (particularly those in the inner cities and rural areas) in which teachers—their graduates—will ultimately practice their profession.

- Higher education must address teacher education as the clinical practice profession it is, with schools of education serving as "teaching hospitals." New teachers must be followed beyond certification for at least two years and be guaranteed the expert, formal support, supervision, and mentoring which are mandated for comparable clinical internships. (Is there any rational person who believes that a young physician, a certified M.D., but someone who has not completed an internship or residency, is ready for patient care? For that matter, would any community view a young police academy graduate as qualified to serve the citizenry

without first testing his skills as a closely supervised "rookie"?)

• Higher education must embrace accountability and employ it as an incentive to improve institutional efforts to find meaningful and productive ways to measure the quality of teacher education.

• Higher education must make a life-long commitment to the students they have trained as teachers. Professionals can only remain professional if they continue to learn, to hone their skills, and to have access to and participate in a dynamic professional community.

Fertile Ground for New Initiatives. The challenge of preparing 2.5 million qualified teachers is daunting, more so if one believes that all the players are still lining up at the starting line. Fortunately, that is not the case. Across the country, much good work to meet this challenge is already under way, work that provides fertile ground for new initiatives.

The Project 30 Alliance, which grew from an initiative sponsored by Carnegie Corporation of New York, brings together faculty in arts and sciences with education faculty whose overriding purpose is to improve teacher education. The Alliance's intellectual agenda consists of five themes designed to foster an all-university focus on teacher education: subject matter understanding; general and liberal education; pedagogical content knowledge; international, cultural and other human perspectives; and recruitment of underrepresented groups into teaching. Participation in the Alliance is open to any postsecondary institution with a college of arts and sciences and a college of education, or their equivalents.

Statewide initiatives aimed at achieving the national goal of improving the performance of elementary and secondary school students have, in some instances, yielded remarkable results. In Connecticut, for example, a bipartisan 15-year program aimed at improving student performance—even as the numbers of low-income, non-English-speaking students have increased—has resulted, according to Linda Darling-Hammond, in the highest levels of student achievement in the country. Not surprisingly, according to Dr. Darling-Hammond, the program "focused on good teaching."

The National Board for Professional Teaching Standards, established in 1987 with support from Carnegie Corporation, has developed advanced standards for teachers in 21 certification fields. "Everybody is vested in a teacher's success," observes National Board President Betty Castor. The National Board is committed to "making good teachers better, making them professional," she explains, adding that teachers who have completed the rigorous process of certification have characterized the experience as "the best professional development I've ever had." Dr. Castor also points out that "a number of universities are giving masters degree candidates credit for National Board certification."

The University of Wisconsin-Milwaukee has adopted "multiple pathway strategies" to address the challenge of improving teacher education, according to Chancellor Nancy L. Zimpher. "We are not at ground zero," she says, pointing to such initiatives as Partnerships for Education, a community-wide effort to improve urban schools involving the participation of the University, Milwaukee Public Schools, Milwaukee Area Technical College, and educational institutions and organizations throughout southeastern Wisconsin. Another initiative, the University's Partnership Academy for Improving Teacher Quality, focuses on developing a comprehensive education model for K-8 grade teachers in high-need schools. Still another, the Collaborative Teacher Education Program for Urban Communities, offers preparation for general and special education teachers K-8 and has targeted as prospective students educational assistants and paraprofessionals in the Milwaukee public schools.

Arthur Levine, president of Teachers College, Columbia University, suggests that higher education would do well to consider "alternative routes" to turning out the vast number of quality teachers that are needed. With the number of Ph.D candidates in decline at arts and sciences institutions and many education schools "looking for cover," says Dr. Levine, "This is a great time to explore alternative routes."

He cites retirees, persons seeking a second career, former military personnel, Peace Corps veterans, and casualties of corporate downsizing—in short, mature, variously skilled individuals with a powerful incentive to learn new skills—as a valuable resource for potential teachers, and excellent candidates for outcome-based teacher-training programs. The existing pool of teachers is itself a resource, he emphasizes, one that would clearly benefit from remedial instruction, mentoring, and work with peers. "It's easier to save the teachers you have, then to train new ones," declares Dr. Levine.

The Children Are Waiting. As it has in the past, Carnegie Corporation of New York will, through a competitive process, provide support to those institutions of higher education prepared to provide leadership on behalf of the national challenge set before us. The need for such an effort is critical, and the timing right.

The expected turnover of teachers in the coming decade can be looked at as a pending calamity or, as Daniel Fallon declares, "a grand opportunity to help the nation improve its schools." Here, at the start of a new century, Carnegie Corporation of New York challenges America's colleges and universities to take firm hold of this "grand opportunity," to marshall and make use of mounting research data, to build on existing initiatives, to forge new partnerships, and to foster collaboration, in short, to do what it takes to get the job done. For if we are successful in designing imaginative, dynamic new models for the preparation of effective teachers, it follows that we will also succeed in raising the standards of learning and achievement for all of

America's children, who—in classrooms in suburban, inner city, and rural schools throughout the nation—are waiting for their teachers to arrive.