

the 1985-86 academic year was only \$33,090. The typical newly hired assistant professor still earns only about \$28,000, so it is hardly surprising that many of the brightest undergraduates in the last decade opted for careers in business, law and medicine — careers in which starting salaries often exceed the \$46,338 that the typical full professor earns. Although some professors, such as those teaching in business schools, the sciences or law, are able to increase their salaries significantly by outside work such as consulting, those in most disciplines, like the humanities and social sciences, do not have such opportunities.

**E**VEN THOSE who earn doctorates increasingly decide against an academic career. Of the 750,000 actively working people with Ph.D.'s in the United States, about 43 percent are employed outside higher education, up from about 35 percent in the early 1970's. Those with doctorates in computer science, mathematics, electrical engineering and the hard sciences are especially in hot demand in industry. There is already an acute shortage of these experts in academia.

In addition, colleges and universities have had difficulty competing with the business world's amenities, ranging from clerical help to the quality of research facilities. Once ivory towers were the places where the state-of-the-art scientific and engineering equipment resided. Now that is no longer necessarily true. "In the last 10 to 15 years, universities have fallen behind industry in that regard," said Mr. Rosenzweig of the Association of American Universities.

The Federal Government has both aided and hampered universities' ability to refurbish the quality of their research facilities. On one hand, the Reagan Administration has increased funding for upgrading equipment in university laboratories. On the other, the new tax law has made it much more difficult for some of the most important private universities to raise funds, by placing a cap on the tax-exempt bonds they can issue.

While Congress has resisted the Administration's attempts to slash student financial aid, the total amount of Federal funds available has still declined slightly in constant dollars since 1980, said Patricia A. Smith, director of legislative analysis at the American Council on Education, an umbrella organization of the nation's four-year colleges and universities.

In the last few years, the Administration has steadily increased the budget of the National Science Foundation in an attempt to develop more scientists and engineers. But both the Administration and Congress have ignored the humanities and social sciences — a neglect educators fear will take its toll on faculties in the future. "The largest deterrent right now to creating an adequate supply of faculty in the humanities and social sciences in the 1990's and beyond is the large amount of debt that students will have to assume to finance their education," Ms. Smith said. "We in the higher-education community would like to see increased Federal support at the undergraduate and graduate levels for grants and fellowships."

### The Big Question

The big question of the moment, though, is whether all the programs aimed at expanding the talent pool in the teaching pipeline will suffice. Mr. Boyer of the Carnegie Foundation fears the programs are too little, too late. "They clearly will not meet the full need for developing an adequate supply of scholars in the humanities and social sciences," he said. He also predicts that the nation will suffer from shortages of scientists, mathematicians and teachers from minority groups. "I'm not sure we can catch up," he said.

Moreover, while such schools as Brown, Columbia and Oberlin are using vacancies to re-examine their future needs and reshape the distribution of their faculties, others are still confused about what to do. "Many institutions themselves are not certain of what type of faculty they want for the 1990's," said Alfred D.

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John Groth

# Wanted: 1 Million Schoolteachers

By Amy Stuart Wells

**A**CCORDING TO the American Federation of Teachers and the National Education Association, more than one million new elementary and secondary school teachers will be needed in the next five years — approximately 200,000 teachers each year until 1992. Yet only 100,000 to 120,000 new teachers are entering the profession each year, according to Linda Darling-Hammond, director of the education and human resources program at the Rand Corporation.

Mary Futrell, president of the N.E.A., cites the rising average age of teachers — up from 37 in the 1950's and 1960's to 43 today — as a sign that fewer younger people are entering teaching and more teachers will be retiring in the near future. Albert Shanker, president of the A.F.T., predicted that the problem would worsen as some of the reasons motivating people to choose teaching disappeared, including limited career choices for women. Increased employment opportunities for minorities, Mrs. Futrell added, have also caused the per-

centage of minority teachers to decline from 12 percent in 1963 to 8 percent today. Both officials predicted that up to 25 percent of all recent college graduates would have to go into teaching to reverse the shortage.

However, only 7.3 percent of all 1986 college freshman expressed an interest in teaching as a career, according to a report released by the University of California at Los Angeles and the American Council on Education, an umbrella organization of four-year colleges and universities. Although this percentage is up from a record low of 4.7 percent in 1982, the total number of freshmen planning to be teachers declined by 74 percent between 1968 and 1985.

"There are some indications of a rise in both the quantity and quality of students who are interested in teaching," says Dr. P. Michael Timpane, president of Columbia University's Teachers College. "But the rate is not yet great enough to make up for the difference."

Still, some experts dispute these gloomy statistics, including officials at the Education and

Labor Departments and the National Center for Education Information, a private research organization. "Of course there will be shortages here and there," said Education Secretary William J. Bennett, "but in terms of aggregate figures, I'm more encouraged than I have been in a long time."

Both the Federal Bureau of Labor Statistics and the Center for Education Information recently released controversial reports characterizing those concerned about a teacher shortage as "Chicken Littles." Daniel Hecker, the author of the Labor Statistics Bureau's report, said that about 170,000 new elementary and secondary teachers would be needed yearly from 1986 to 1989, and that figure would increase to 210,000 yearly from 1990 to 1995. Although Mr. Hecker's findings show an increase in need for new teachers, he does not think it will be difficult to meet, since 175,000 teachers were hired in 1984 alone.

C. Emily Feistritzer, director of the Center for Education Information, contends with Mr. Hecker that the pool of prospec-



tive teachers is greater than the reports on college students indicate. "People who talk of a teacher shortage have never focused on the kind of market I'm talking about," said Ms. Feistritz, who recently started a national clearinghouse to link college-educated people interested in teaching, regardless of their age, with school officials needing their services. Her organization, called Professions in Education, is reachable toll-free at 1-800-334-0854, extension 512.

Ms. Feistritz also predicted that many of those who left teaching or graduated with education degrees during the teacher glut of the 1970's will now return to the classroom.

Those who fear no shortage believe that education reform will play a major role in increasing the teacher supply. Secretary Bennett pointed to recent rises in teachers' salaries in many states and concomitant increases in job mobility, including career advancement and master-teacher programs. "But the most important factor is the national concern about education and the need to make improvements," Mr. Bennett said. Such concerns will draw more of the brightest into teaching, he predicted.

Ms. Feistritz said that state education boards should "open their doors" to the older potential teachers. In fact, 23 states have devised alternate certification

Fall of Year	Total Established Teacher Demand	Estimated Demand for Additional Teachers					Estimated Supply of New Teacher Graduates	Supply as Percent of Demand
		Total	Public	Private	Elementary	Secondary		
1986	2,436	170	143	27	114	56	144	84.7
1987	2,452	160	144	16	114	46	142	88.8
1988	2,468	164	140	24	126	38	139	84.8
1989	2,493	173	146	27	126	47	139	80.3
1990	2,527	183	160	23	131	52	139	76.0
1991	2,569	195	176	19	129	66	138	70.8
1992	2,624	209	181	28	129	80	137	65.6

Sources: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1992-93*, forthcoming; and National Education Association

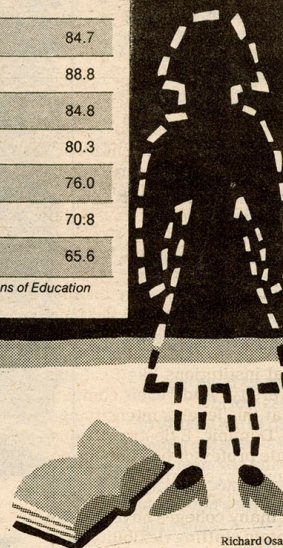
routes for people lacking paper credentials. "We have got about four million college graduates in blue-collar and clerical jobs," Mr. Hecker said. "And I find it hard to believe that they would not rather teach than type."

Although Dr. Timpane agreed that the search for prospective teachers should extend beyond the current pool of college students, he differed with the assumption that a large number of

older people want to teach, especially those who left teaching. "The message we're getting back from these people," he said, "is that they are quite happy with what they are doing now."

And as Mrs. Futrell observed: "We've been talking about a teacher shortage for three years now. If those who left teaching are coming back, why haven't they surfaced yet?"

Ernest L. Boyer, president of



Richard Osaka

the Carnegie Foundation for the Advancement of Teaching, said that what he called the "shoot-out" over numbers obscured the real issue. "This is a case where one group says the glass is half

empty and the other says the glass is half full," Dr. Boyer said. "The debate is a diversion. We haven't even touched on the real problem of making this an attractive profession."

Bernard R. Gifford, dean of the Graduate School of Education at the University of California at Berkeley, said that many teachers now in the classrooms should not even be there. "If you argue that a warm body who is teaching is a teacher, then there's no shortage," he said. "But I'm appalled by the number of people in the schools both inadequately trained and temperamentally unsuited for teaching."

The most disconcerting problems, Dr. Timpane said, are the "spot shortages" occurring in math, the sciences and foreign languages in large urban areas. According to an N.E.A. report, two months before the 1986-87 school year began, Philadelphia had 500 teaching vacancies, Houston had 1,600 and Los Angeles had over 2,000 unfilled jobs.

The optimists believe that such vacancies can be filled if more "short-term" teachers are allowed into the profession. "What exactly makes a qualified teacher?" asked Chester E. Finn Jr., United States Assistant Secretary for Educational Research and Improvement. "Is it defined by a license or by skills, knowledge and personal competence? I prefer the latter."

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