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ABSTRACT

An analysis of data on teachers indicates coming changes in recruitment and retention of the American teaching force, in the quality of teachers, and in the attractiveness of teaching as a profession. New recruits to teaching are less academically qualified than those who are leaving, and shortages of qualified teachers in subjects such as mathematics and science are expected to grow into a more generalized teacher shortage. Teachers' salaries fall far below those of other professions. Lack of input into professional decision making, overly restrictive bureaucratic controls, and inadequate administrative supports for teaching contribute to teacher dissatisfaction and attrition, particularly among the most highly qualified members of the teaching force. Professionalizing teaching will require a new career structure in which improved preparation and professionally enforced standards of practice are combined with increased responsibility for technical decision making by competent teachers. Upgrading teacher compensation and creating more professional working conditions are part of a structural solution, one that addresses the interrelated causes of the teacher supply and quality problems, rather than merely their symptoms. (JD)

Beyond the Commission Reports

The Coming Crisis in Teaching

Linda Darling-Hammond

Rand

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The Coming Crisis in Teaching

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July 1984

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PREFACE

The text of this report was first compiled and presented as a briefing to The Rand Corporation Board of Trustees on April 13, 1984. The research on which it is based was accumulated over the course of several Rand studies of the teaching profession, supported in part by the National Institute of Education and The Ford Foundation. Because of widespread interest in the topic, the briefing is being published as a report so that it can be made available to education policymakers, practitioners, and researchers who are concerned about the status of, and the prospects for, the teaching profession.

SUMMARY

This report treats the current status of the teaching profession at a time when renewed efforts to improve the quality of American education are occurring at the federal, state, and local levels. The report demonstrates that dramatic changes in our nation's teaching force will soon lead to serious shortages of qualified teachers unless policies that restructure the teaching profession are pursued. Until teaching becomes a more attractive career alternative, the problems of attracting and retaining talented teachers will undermine the success of other reforms intended to upgrade educational programs and curricula.

The report analyzes recent data indicating changes in the recruitment and retention patterns of the American teaching force, in the quality of teachers, and in the attractiveness of teaching as a profession. The current highly educated and experienced teaching force is dwindling as older teachers retire in increasing numbers and many younger teachers leave for other occupations. Recent evidence suggests that new recruits to teaching are less academically qualified than those who are leaving, and the number of new entrants is insufficient to meet the coming demand for teachers. The most academically able recruits to teaching leave the profession within a very short time. Shortages of qualified teachers in subject areas such as mathematics and science are expected to grow over the next few years into a more generalized teacher shortage as enrollments increase and the supply of prospective teachers continues to shrink.

Several factors contribute to this problem. Demographic trends are provoking supply and demand imbalances for teachers. More significantly, though, academically talented women and minorities, who were once restricted to teaching as a professional option, are now choosing other occupations that promise greater financial rewards, more opportunities for advancement, and better working conditions. Teachers' salaries fall well below those of most other occupations that require a college degree, and average teachers' salaries have been declining for the past decade. The non-pecuniary rewards of teaching have also been dwindling, as teachers are increasingly viewed as bureaucratic functionaries rather than as practicing professionals. Lack of input into professional decisionmaking, overly restrictive bureaucratic controls, and inadequate administrative supports for teaching contribute to teacher dissatisfaction and attrition, particularly among the most highly qualified members of the teaching force.

Unless major changes are made in the structure of the teaching profession, so that teaching becomes an attractive career alternative for talented individuals, we will in a very few years face widespread shortages of qualified teachers. We will be forced to hire the least academically able students to fill these vacancies, and they will become the tenured teaching force for the next two generations of American school children.

Higher salaries for teachers are only part of the solution to this problem. As in other occupations, working conditions that affect teachers' abilities to perform their jobs effectively are a partial substitute for wages. In teaching, a particularly important aspect of those working conditions is the degree of professionalism allowed in the work structure. Professionalizing teaching will require a new career structure in which improved preparation and professionally enforced standards of practice are combined with increased responsibility for technical decisionmaking by those who successfully demonstrate their competence. Upgrading teacher compensation and creating more professional working conditions are part of a structural solution, one that addresses the interrelated causes of the teacher supply and quality problems, rather than merely their symptoms.

ACKNOWLEDGMENTS

This report is the product of many people's insights. Several years of research and reflection on teaching issues by Arthur E. Wise provided much of the conceptual background for this study. Rand researchers Thomas K. Glennan, Paul T. Hill, Sue E. Berryman, and Richard Shavelson contributed important criticisms as the briefing was being prepared. David Lyon provided motivation for compiling the briefing and this report. Mary Vaiana assisted in the cogent formulation of the ideas presented herein. The author, of course, remains responsible for any errors of fact or interpretation that have survived their careful scrutiny.

BEYOND THE COMMISSION REPORTS: THE COMING CRISIS IN TEACHING

WANTED

College graduate with academic major (master's degree preferred). Excellent communication and leadership skills required. Challenging opportunity to serve 150 clients daily, developing up to five different products each day to meet their needs. This diversified job also allows employee to exercise typing, clerical, law enforcement, and social work skills between assignments and after hours. Adaptability helpful, since suppliers cannot always deliver goods and support services on time. Typical work week 47 hours. Special nature of work precludes fringe benefits such as lunch and coffee breaks, but work has many intrinsic rewards. Starting salary $12,769, with a guarantee of $24,000 after only 14 years.

The conditions described in this want ad accurately characterize the typical secondary school teaching assignment in the United States today. Who would take a job like this? The answer to that question is the topic of this report.

The Emerging Crisis in Teaching

Over the past eighteen months, a number of major reports have been issued on the quality of American education. Reports from the National Commission on Excellence in Education, the Education Commission of the States, the National Science Board, the Twentieth Century Fund, and other institutions have called for higher educational standards, increased course requirements, and other major reforms designed to improve the quality of instruction. The message of these reports is important. However, the crisis now emerging in the teaching profession could preclude the attainment of the other reforms being urged. If public schools are to attract enough highly qualified people to become teachers, working conditions and compensation must change in significant ways.

The nation's teaching force is changing dramatically. The current highly educated and experienced staff is dwindling as older teachers retire and many younger teachers leave for other occupations. Recent evidence suggests that new recruits to teaching are less academically qualified than those who are leaving; moreover, the number of new entrants is insufficient to meet the coming demand.

Chart 1 shows the decline in academic ability of students planning to become teachers, as measured by scores from Scholastic Aptitude Tests (SAT). The scores of students planning to major in education have traditionally been lower than those of other students. In addition, over the past decade, the scores of potential education majors have declined more steeply than those of other students.[1] Most teaching recruits are now drawn from the bottom group of SAT scorers; most of the few top scorers who are recruited to education leave the profession quickly.[2]

Chart 2 shows the pattern of attrition from teaching, using data for white female entrants to the teaching profession in 1973 in North Carolina. Here the measure of ability is the National Teachers Examination (NTE), which is given to prospective teachers in many states. The attrition rates of the North Carolina teachers tested in 1973 were

Academic Ability of Incoming Teachers Is Declining

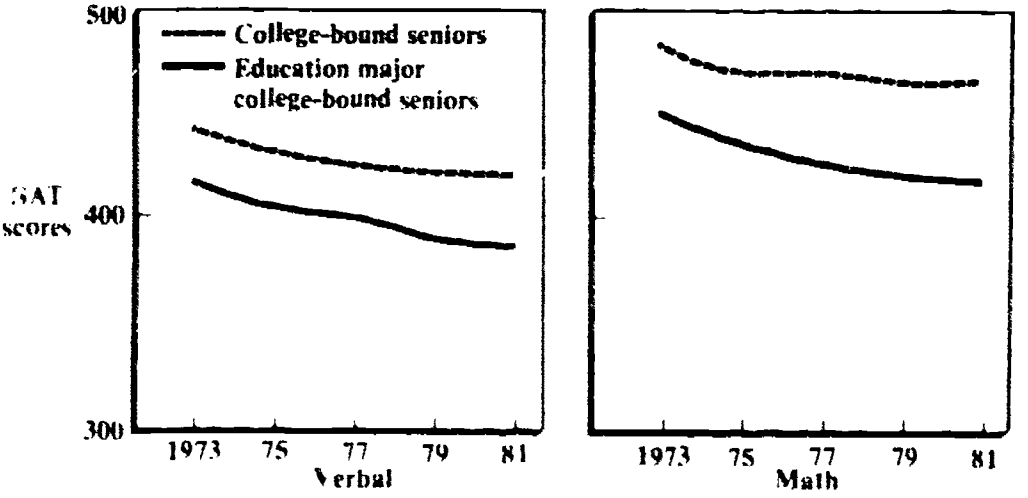


Chart 1

[1]National Center for Education Statistics, *The Condition of Education, 1982 Edition*, U.S. Department of Education, 1982, p.111.

[2]For example, 28 percent of the lowest quintile of SAT scorers from the high-school class of 1973 went into teaching, and more than half of them planned to stay in the profession. By contrast, only 8 percent of the highest quintile went into teaching, and only 25 percent of them planned to stay. Victor S. Vance and Phillip C. Schlechty, *The Structure of the Teaching Occupation and the Characteristics of Teachers: A Sociological Interpretation*, Paper presented at the National Institute of Education Conference at Airleigh House, Virginia, February 25–27, 1982.

Attrition Rates of Teachers

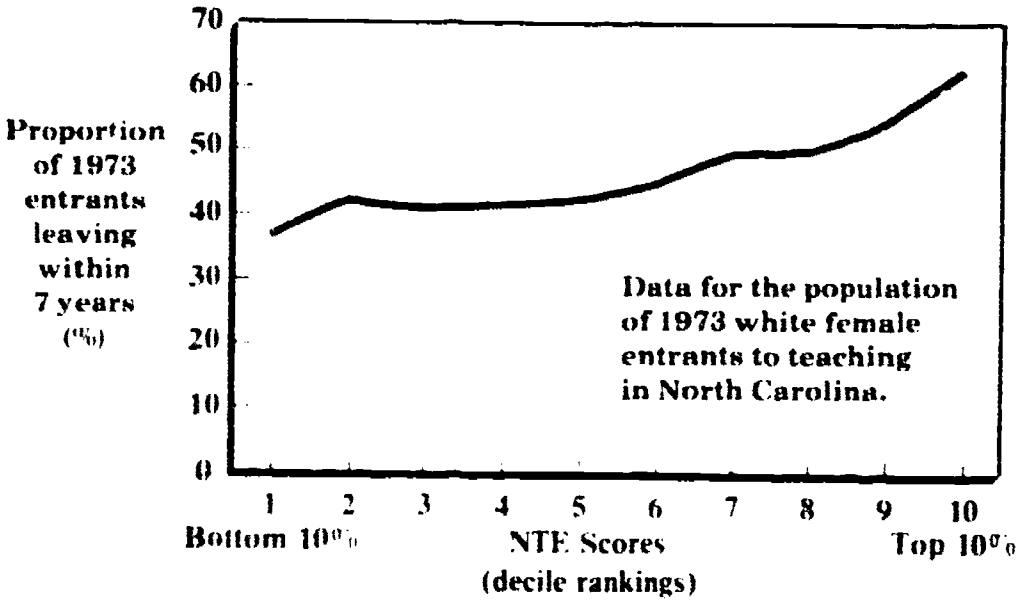


Chart 2

directly related to NTE scores: Many more top scorers than bottom scorers left teaching within 7 years. By 1980, almost two-thirds of the top decile had left, whereas only about one-third of the bottom decile had left.[3]

Although these measures of academic ability do not fully predict teaching performance, it is clear that the teaching profession is attracting and retaining fewer academically able young people than it has in the past.

For most of the past decade, there has been a widely recognized surplus of teachers, so policymakers have not been aware of recent changes in recruitment patterns. In the past few years, though, shortages have been occurring in certain teaching areas, particularly in secondary school specialties. A recent survey of teacher placement officers[4] identified nationwide shortages in the following areas:

[3]Phillip C. Schlechty and Victor S. Vance, "Do Academically Able Teachers Leave Education? The North Carolina Case," *Phi Delta Kappan*, Vol. 63, 1981, pp. 106–112.

[4]Association for School, College and University Staffing, *Teacher Supply/Demand, 1984*, Madison, Wisconsin, 1984.

- Mathematics
- Physics
- Computer programming
- Chemistry
- Data processing
- Bilingual education
- Special education
- Earth science
- Biology
- English

The shortages in mathematics and the sciences are particularly severe, but other teaching areas that formerly showed surpluses are also joining the list. The shortages have immediate effects on educational quality, because they mean that courses must often be taught by teachers who are not qualified in the subject areas.

Charts 3 and 4 show the dimensions of this qualifications problem. In 1981, the most recent year for which data are available, fewer than half of the newly hired teachers in mathematics and science were certified or eligible for certification in the subjects they were assigned to teach. Fewer than two-thirds of the newly hired teachers in English, social studies, and other secondary subjects were qualified by this criterion.[5]

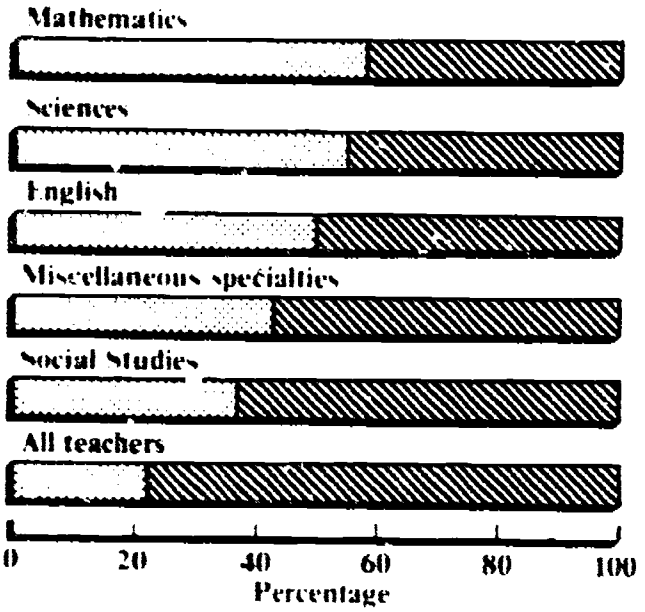
The shortage of mathematics and science teachers exemplifies the magnitude of the long-range teacher supply problem. According to one set of estimates, of a total teaching force of about 200,000 mathematics and science teachers, 9 percent left in 1982–83, 30 percent are not fully qualified for the subjects they are teaching, and over 40 percent will retire within the next decade.[6] The National Science Teachers Association estimates that 300,000 new mathematics and science teachers will be needed by 1995—more than the total number of mathematics and science teachers currently teaching.[7]

Furthermore, there is no indication that the teaching profession is attracting new mathematics and science teachers at a rate that might potentially meet the increased demand. In fact, as Chart 5 shows, exactly the opposite is true. In 1981, the nation's colleges granted fewer than 1400 bachelor's degrees in the fields of mathematics and

[5]National Center for Education Statistics, *The Condition of Education, 1983 Edition*, U.S. Department of Education, 1983, p.206.

[6]National Science Teachers Association Survey, December 1982, reported in Hope Aldrich, "Teacher Shortage Likely to Get Worse Before It Gets Better," *Education Week*, July 27, 1983.

[7]Ibid.

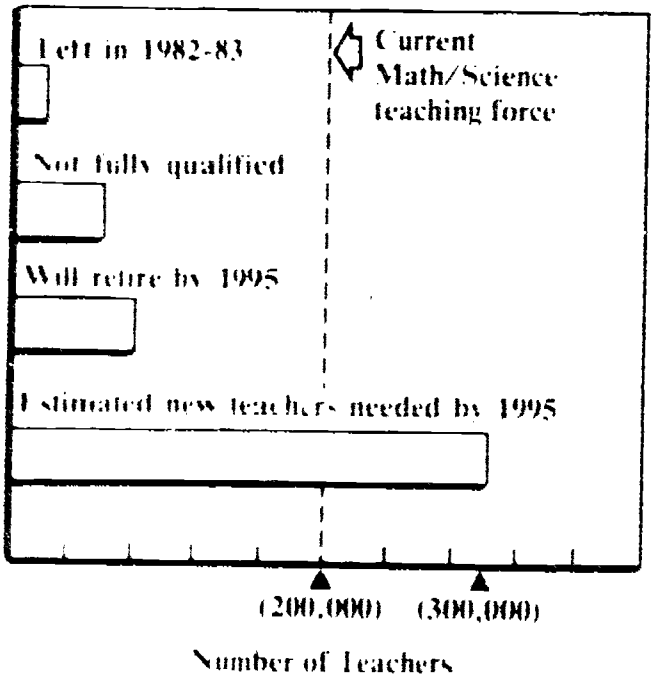


Qualifications of New Teachers for the Field They Are Currently Teaching (1981)

Certified or eligible for certification in field currently teaching

Not certified or eligible for certification in field currently teaching

Chart 3



Status of the Mathematics and Science Teaching Force

Chart 4

science education combined.[8] This number represents less than one mathematics or science teacher for every ten school districts in the United States. In the following school year, 1982–83, about 18,000 mathematics and science teachers left their teaching positions. (About 37 percent of these teachers left for non-teaching employment; 9 percent retired; and the remainder took other teaching-related jobs.)[9]

All indications are that the shortages of specialized teachers will expand to a more general shortage of qualified teachers within the next few years. Given current trends in school-age population, entrants to the teaching profession, and attrition, the supply of new teacher graduates may satisfy only about 80 percent of the demand for additional teachers by 1988[10] (see Chart 6).

Although teacher shortages have occurred before, most recently in the 1960s, there are new reasons for the current shortages, and new responses will be required. Demographic trends, expanded

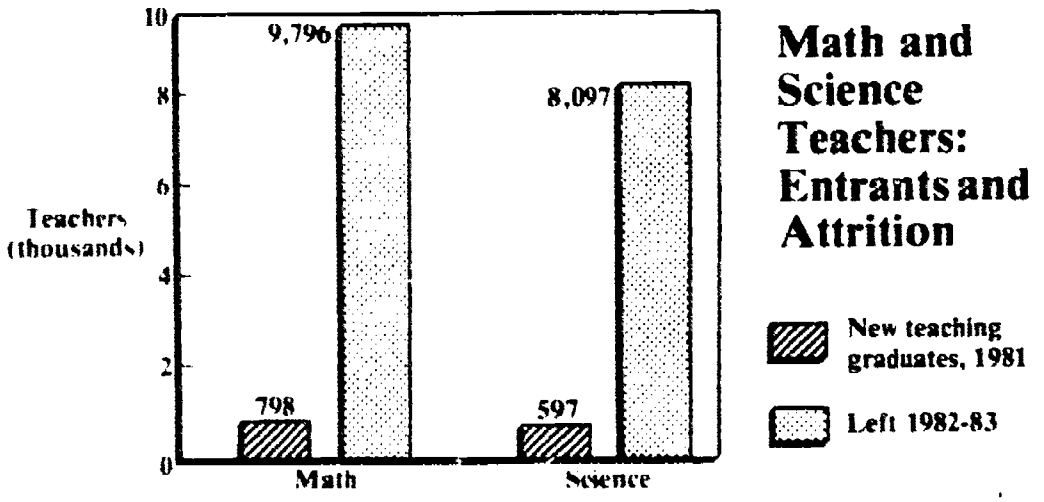
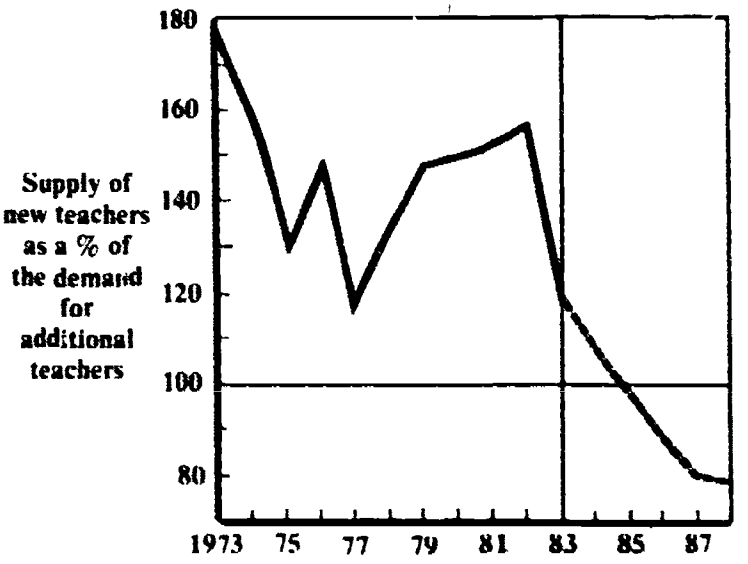


Chart 5

[8]NCES, *The Condition of Education, 1983*, p. 188.

[9]N.S.T.A. Survey, op. cit.

[10]Estimates derived from Table 2.9, National Education Association, *Teacher Supply and Demand in Public Schools*, 1973, 1976, 1977, 1978; and National Center for Education Statistics, *Projections of Education Statistics to 1988–89*, U.S. Department of Education, 1980. More recent projections by NCES place low to intermediate supply estimates for 1990 at 55 to 110 percent of demand; NEA projections estimate that the supply of new graduates will fill 70 percent of the demand in 1990. NCES, *Projections of Education Statistics to 1990–91*, 1982, p.86; NEA, *Teacher Supply and Demand in Public Schools, 1981-82*, 1983, p.22.



A General Shortage of Teachers Is Imminent

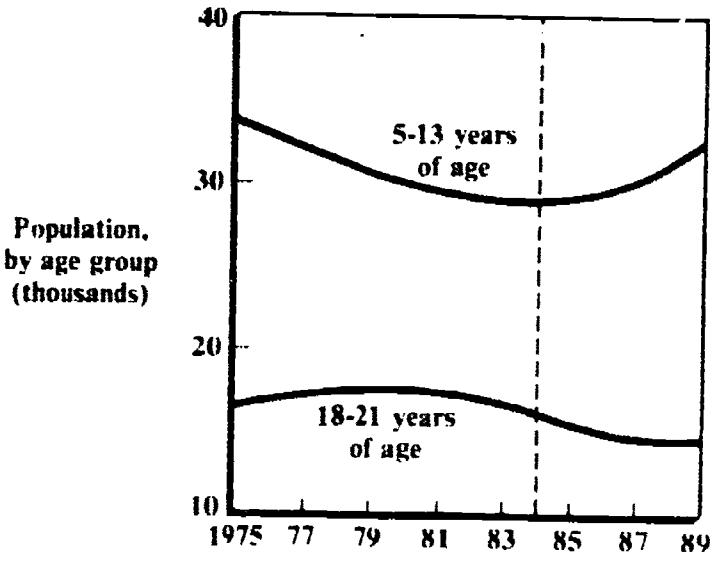
Chart 6

opportunities for minorities and women, and the low salaries and lack of prestige associated with teaching—each a powerful force in itself—combine to make solutions to the shortage problem more difficult to design and implement.

Demographic trends have provoked supply and demand imbalances in teaching before, and they are doing so once again. As Chart 7 shows, the sources of supply and demand are moving in opposite directions for the short-term future. After a decade of declining enrollments in elementary and secondary schools, a baby boomlet that began in the early 1980s will begin to cause enrollment increases starting in 1985. At the same time, the college-age population from which most potential teachers will be drawn will continue to decline through the remainder of the decade and slightly beyond.

Meanwhile, the number and proportion of bachelor's degrees conferred in education have declined fairly steeply over the past decade. In times past, public education was a major employer of college graduates. In 1971, for example, more than 20 percent of the bachelor's degrees conferred were in education. By 1981, the proportion had dipped to less than 12 percent.[11] This decline may have been partly a response to the teacher surpluses that characterized the 1970s;

[11]NCES, *The Condition of Education, 1983*, p. 184.



School-Age Population Trends

Chart 7

however, the data suggest that other market forces are at work as well. Alternative occupations are available to a wider spectrum of college graduates, and many are choosing these more lucrative fields, even though the demand for teachers is growing. There is no sign that supply is responding to demand even in fields where there are widely publicized shortages. The number of education degrees conferred in mathematics and science, for example, continues to decline.[12]

One of the labor market factors having the greatest effect on the teaching profession is the growth in opportunities available to women and minorities. Women have traditionally comprised the large majority of the teaching force, and they still do so. However, academically talented women, in particular, are increasingly pursuing other occupations. Between 1970 and 1980, the proportion of women receiving bachelor's degrees in education decreased by half, from 36 percent to 18 percent. By 1981, the proportion had dropped to 17 percent.[13] During that decade, women's professional options expanded enormously, as Chart 8 shows. Women's occupational choices shifted from education, English, and the social sciences to business and commerce and the health professions. The proportion of degrees granted to women also

[12]Ibid., p. 188.

[13]Ibid., p. 184.

Bachelor's and First Professional Degrees for Women — 1970-1980

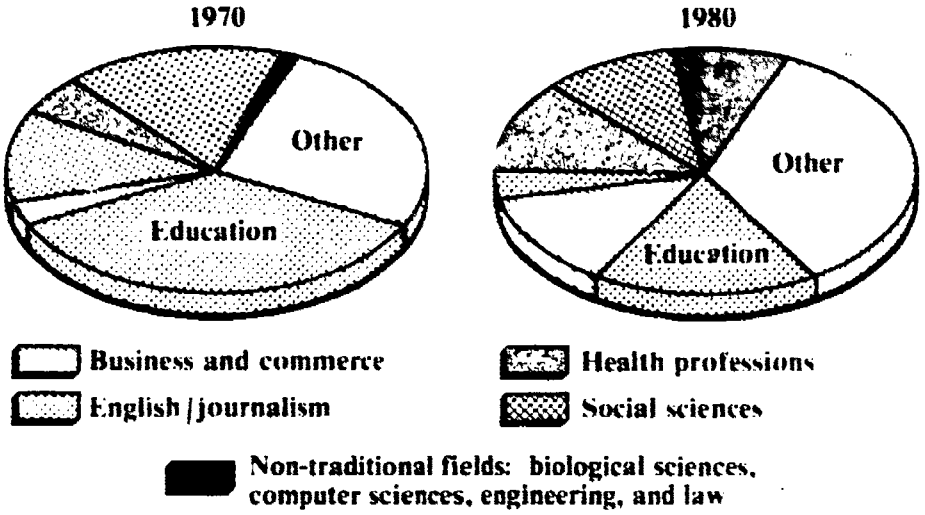


Chart 8

increased tenfold in the biological sciences, computer sciences, engineering, and law.[14]

Why Has Teaching Lost its Appeal?

Can academically able students be reattracted to the teaching profession in a labor market that offers other, more attractive choices?

The current salary structure of the teaching profession will surely not provide strong motivation. Beginning salaries for teachers are lower than those in virtually any other field requiring a bachelor's degree (Chart 9). Even when teaching salaries are adjusted to reflect a twelve-month salary equivalent, they fall short of the next lowest category (liberal arts graduates).[15] Teachers' salaries also reach a ceiling much sooner and at a much lower level than do the salaries of other college-educated workers.

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[14]Bureau of the Census, *Statistical Abstract of the United States: 1984*, 104th ed., U.S. Department of Commerce, 1983, p.166; Bureau of the Census, *Statistical Abstract of the United States: 1973*, 94th ed., U.S. Department of Commerce, 1973, p. 133.

[15]Data are for the 1981-82 school year. National Education Association, *Prices, Budgets, Salaries and Income: 1983*, 1983, p. 22.

Beginning Salaries of Bachelor's Degree Graduates

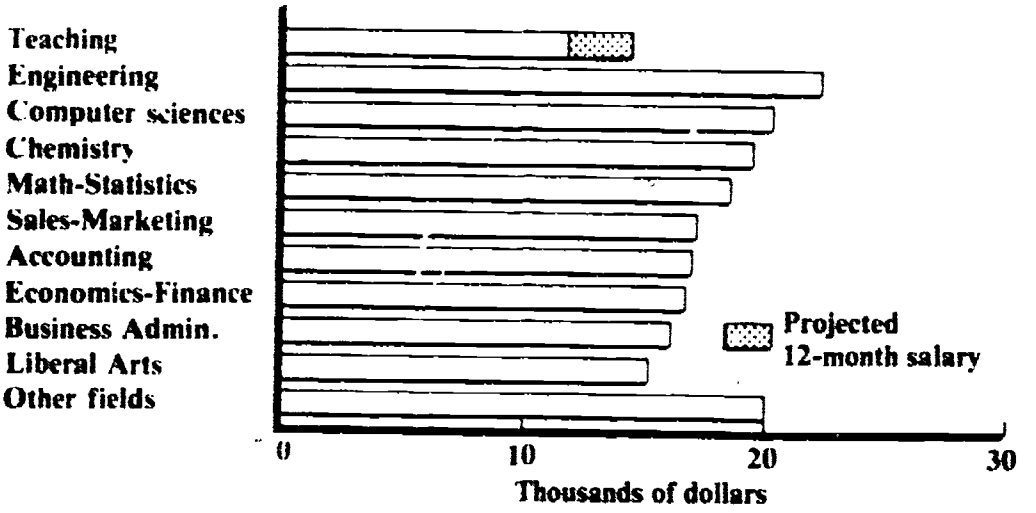


Chart 9

The situation is made worse by the fact that teachers' salaries have lost ground relative to other occupational salaries over the past ten years. Although there is a common perception that teachers' salaries have improved as a result of collective bargaining, average salaries for teachers actually declined by nearly 15 percent in real dollar terms between 1971 and 1981,[16] even though the average experience level of the teaching force increased over that period, as did the average education level. The majority of teachers now have at least a master's degree and about 13 years of experience.[17]

The data paint a rather gloomy picture of the recruitment potential of the teaching profession. But many studies suggest that people are attracted to teaching for altruistic reasons—because they love to work with children and want to make a contribution to society. Indeed, the primary rewards of teaching are the intrinsic, non-pecuniary satisfactions derived from imparting knowledge and seeing young people grow

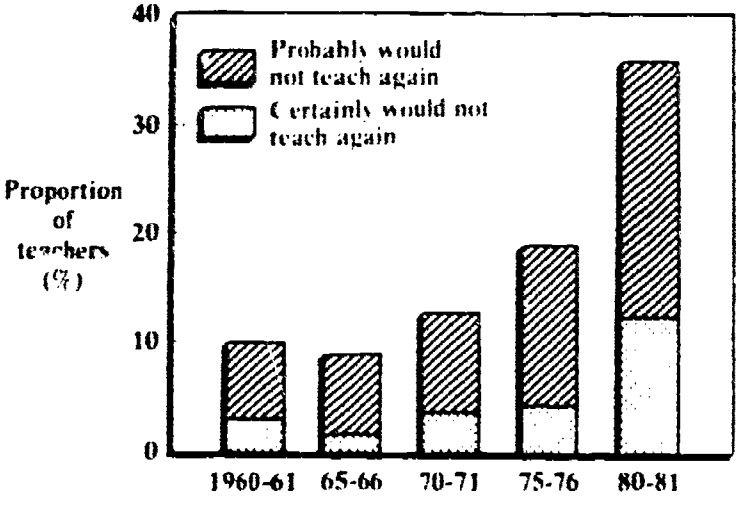
[16]NCES, *The Condition of Education: 1983*, pp. 102–103.

[17]National Education Association, *Nationwide Teacher Opinion Poll, 1983*, 1983. p. 6.

and learn.[18] But even these satisfactions have been declining as the nature of teaching work has changed. Teachers express increasing dissatisfaction with the conditions under which they work and the policies that define their classroom activities.

For several decades, the National Education Association has polled several thousand teachers annually about their teaching conditions and views. One question asked in each poll is, If you could go back and start all over again, would you still become a teacher? Chart 10 shows the dramatic change in the response to that question over twenty years. Between 1971 and 1981, the proportion of respondents saying they would not teach again more than tripled, rising from about 10 percent to nearly 40 percent. Less than half of the present teaching force say they plan to continue teaching until retirement.[19]

It is easy to summarize the factors that contribute to teacher dissatisfaction. Teachers feel that they lack support—physical support in terms of adequate facilities and materials; support services such as clerical help for typing, duplicating, and paperwork chores; and



Percent of Teachers Who Would Not Teach Again — Teacher Dissatisfaction Has Increased. . .

Chart 10

[18]See, for example, Daniel C. Lortie, *Schoolteacher: A Sociological Study*, Chicago: University of Chicago Press, 1975; Phillip W. Jackson, *Life in Classrooms*, New York: Holt, Rinehart and Winston, 1968; Linda Darling-Hammond and Arthur E. Wise, *A Conceptual Framework for Examining Teachers' Views of Teaching and Educational Policies*, The Rand Corporation, N-1668-FF, February 1981.

[19]National Education Association, *Status of the American Public School Teacher, 1980-81*, 1982, pp. 73-76.

administrative support that would provide a school environment in which their work is valued and supported rather than obstructed by interruptions and a proliferation of non-teaching tasks. They see their ability to teach hampered by large class sizes and non-teaching duties. And they feel that they are not treated as professionals. They have limited input to decisions that critically affect their work environment, and they see few opportunities for professional growth.[20]

Let us translate these categories into more concrete terms. Imagine that you are a high-school English teacher. You have at least a master's degree (as do most teachers today) and you would like to impart to your students the joys of great literature and the skills of effective communication. You have at your disposal a set of 100 textbooks for your 140 students. You cannot order additional books so you make copies of some plays and short stories, at your own expense, and you jockey with the 50 other teachers in your school for access to one of the two available typewriters so that you can produce other materials for your class. You stand in line after school to use the secretary's telephone to call parents of students who have been absent or are behind in their work.

You spend roughly 12 hours each week correcting papers, because you believe your students should write a theme each week. You feel guilty that this allows you to spend only 5 minutes per paper. You spend another 6 hours each week preparing for your five different sections, mostly writing up the behavioral objectives required by the system's curriculum guide, which you find meaningless and even counterproductive to your goals for your students. You do all of this after school hours, because your one preparation period is devoted to preparing attendance forms, doing other administrative paperwork, and meeting with students who need extra help. Between classes, you monitor hallways and restrooms, supervise the lunch room, and track down truants.

You are frustrated that the district's new competency-based curriculum is forcing you to spend more and more of your time teaching students to answer multiple-choice questions about the mechanics of grammar. Meanwhile, your efforts to teach writing and critical thinking are discouraged, as they do not seem to fit with the district's mandated curriculum and testing program. You have no input into decisions about curriculum, teaching methods, materials, or resource allocations. You will, of course, never get a promotion; nor will you have an opportunity to take on new responsibilities. You receive frequent

[20]Ibid., pp. 76–78; National Education Association, *Nationwide Teacher Opinion Poll, 1983*, p. 9; American Federation of Teachers, *Schools as a Workplace: The Realities of Stress*, Vol. 1, 1983, pp. 15–17.

feedback about public dissatisfaction with schools and teachers, but little reinforcement from administrators or parents that your work is appreciated. Sometimes you wonder whether your efforts are worth the $15,000 a year you earn for them.

This description is not an overdramatization. It reflects the modal conditions of teaching work in this country today. The importance of professional working conditions to teacher satisfaction and retention has recently been recognized in a number of studies at Rand and elsewhere. Conditions that undermine teacher efficacy, i.e., the teacher's ability to do an effective job of teaching, are strongly related to teacher attrition. These conditions include lack of opportunity for professional discourse and decisionmaking input; inadequate preparation and teaching time; and conflict with or lack of support from administrators.[21]

A particularly troubling aspect of teachers' dissatisfaction with their working conditions is that the most highly qualified teachers are the most dissatisfied. Chart 11 summarizes some results from a recent Rand study of teachers' views of their work environment.[22] Those with academic majors (i.e., those who have a bachelor's or master's degree in their discipline in addition to a teaching certificate) are more dissatisfied with the lack of administrative support for their work, with bureaucratic interference in their work, with their lack of autonomy, and with salaries and other working conditions than are those with education degrees only. Academic majors have typically taken substantially more college coursework in their area of specialization than education majors, and they also tend to be the teachers who hold more advanced degrees. These highly qualified individuals are the kinds of teachers that many would like to attract to and retain in teaching, yet they are the ones most frustrated by the profession's current work environment. They are also much more likely than other teachers to say they plan to leave teaching.

Unfortunately, the approach to improving education reflected in most of the policy initiatives of the past decade has done little to increase the attractiveness of teaching; it may, in fact, have

[21]See, for example, Linda Darling-Hammond and Arthur E. Wise, "Teaching Standards or Standardized Teaching?," *Educational Leadership*, October 1985, pp. 66-69; Susan J. Rosenholtz and Mark A. Smylie, *Teacher Compensation and Career Ladders: Policy Implications from Research*, Paper commissioned by the Tennessee General Assembly's Select Committee on Education, December 1983; D. W. Chapman and S. M. Hutcheson, "Attrition from Teaching Careers: A Discriminant Analysis," *American Educational Research Journal*, Vol. 19, 1982, pp. 93-105; M. D. Litt and D. C. Turk, *Stress, Dissatisfaction, and Intention to Leave Teaching in Experienced Public High School Teachers*, Paper presented at the annual meeting of the American Educational Research Association, Montreal, April 1983.

[22]Data are from an ongoing study of the conditions of teaching work being conducted by Arthur E. Wise and Linda Darling-Hammond.

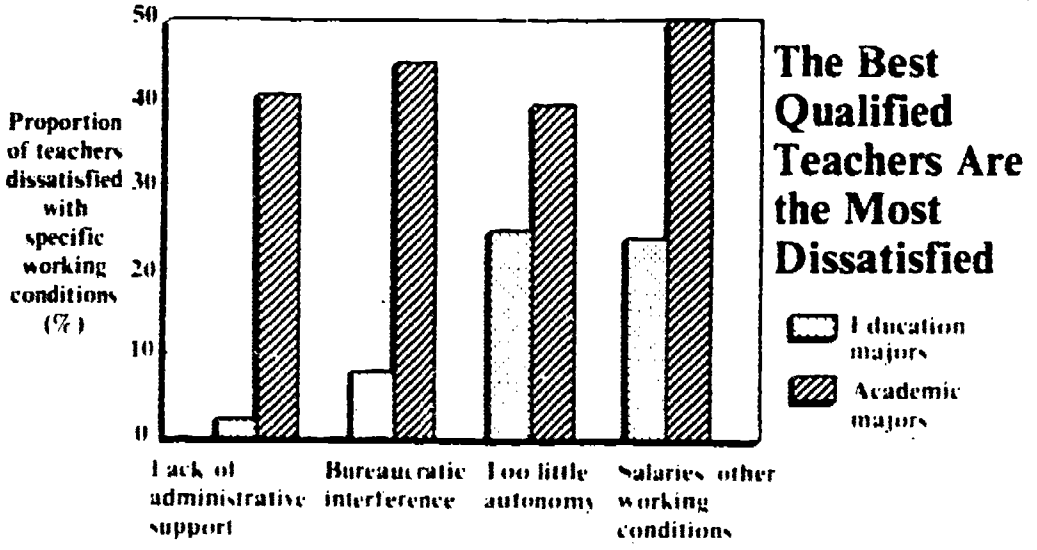


Chart 11

exacerbated the problem. Based on a factory model of schooling in which teachers are semi-skilled, low-paid workers, at least two-thirds of the states enacted policies in the 1970s that sought to standardize and regulate teacher behaviors. Elaborate accountability schemes such as management-by-objectives, competency-based education, minimum-competency testing, and other efforts to develop a teacherproof curriculum were imposed in the belief that if teachers do exactly as they are told, students will learn exactly as they are supposed to.[23] Bureaucratic controls on teaching behaviors were used as an alternative to upgrading the quality of teachers or of professional decisionmaking. As Porter notes:

> The accountability movements of the 1970s view teachers not as autonomous decisionmakers but as agents of public school policymakers, agents subject to hierarchical controls.[24]

These policies have not had the desired effect, because they are based on an inappropriate model of teaching and learning. Indeed, they have had some dysfunctional consequences. Teachers resist

[23]Arthur E. Wise, *Legislated Learning: The Bureaucratization of the American Classroom*, Berkeley: University of California Press, 1979.

[24]Andrew C. Porter, et al., *Teacher Autonomy and the Control of Content Taught*, Institute for Research on Teaching, Michigan State University, December 1979, p. 4.

bureaucratic attempts to constrain their classroom decisions,[25] not because they are opposed to accountability, but because standardized teaching prescriptions reduce their ability to teach effectively.[26] Highly prescriptive teaching policies often limit the curriculum to those subjects and types of thinking that are most easily tested; such policies also prevent the use of alternative teaching strategies that are more appropriate to students' learning needs and create paperwork burdens that detract from teaching time.[27] The results are twofold: emphasis on procedural conformity to narrowly configured objectives at the expense of more creative forms of teaching and learning; and dissatisfaction on the part of teachers who find their ability to respond to students' needs reduced.

Research on effective teaching suggests a very different model for improving education. Studies conducted over the past two decades show that students have different learning styles, and that effective teaching techniques vary for students of different characteristics and at different stages in their development, for different subject areas, and for different learning goals.[28] Appropriate teaching techniques must be determined by diagnosing student needs and matching those diverse needs to appropriate methods of instruction. In this context, professional judgment is a prerequisite for good teaching, because unless students are treated according to their *particular* learning needs, they will

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[25]Darling-Hammond and Wise, *A Conceptual Framework for Examining Teachers' Views*, pp. 56–57; Lortie, *Schoolteacher*, p. 164; Jackson, *Life in Classrooms*, p. 129; R. G. Corwin, *Militant Professionalism: A Study of Organizational Conflict in High Schools*, Meredith Corporation, 1970; Harry F. Wolcott, *Teachers vs. Technocrats*, University of Oregon Center for Educational Policy and Management, 1979.

[26]Linda Darling-Hammond and Arthur E. Wise, "Beyond Standardization: State Standards and School Improvement," *Elementary School Journal* (forthcoming); Lee S. Shulman, "Autonomy and Obligation," in L. S. Shulman and Gary Sykes (eds.), *Handbook of Teaching and Policy*, New York: Longman, 1983; Michael Lipsky, *Street-Level Bureaucracy*, Russell Sage Foundation, 1980.

[27]Darling-Hammond and Wise, "Beyond Standardization"; Anne M. Bussis, "Burn It at the Casket: Research, Reading Instruction, and Children's Learning of the First R," *Phi Delta Kappan*, December 1982, pp. 237–241; Constance Kamii, "Encouraging Thinking in Mathematics," *Phi Delta Kappan*, December 1982, pp. 247–251; Harriet Talmage and Sue Pinzur Rasher, "Unanticipated Outcomes: The Perils to Curriculum Goals," *Phi Delta Kappan*, September 1980, pp. 30–32, 71.

[28]See, for example, W. Doyle, "Paradigms for Research on Teacher Effectiveness," in Lee S. Shulman (ed.), *Review of Research in Education, Vol. 5*, Itasca, Illinois: F. E. Peacock, 1978; M. J. Dunkin and B. J. Biddle, *The Study of Teaching*, New York: Holt, Rinehart and Winston, 1974; F. J. McDonald and P. Elias, *Executive Summary Report: Beginning Teacher Evaluation Study, Phase II*, Educational Testing Service, 1976; L. J. Cronbach and R. E. Snow, *Aptitudes and Instructional Methods: A Handbook for Research on Interactions*, New York: Irvington, 1977; N. L. Gage, *The Scientific Basis of the Art of Teaching*, New York: Teachers College Press, 1978; J. E. Brophy and C. M. Evertson, *Learning from Teaching: A Developmental Perspective*, Boston: Allyn and Bacon, 1976.

be mistreated. Standardized practice is, in essence, malpractice. The need for diagnosis of individual situations and for judgments about appropriate strategies and tactics is what defines a profession.[29]

Our own research on teachers reinforces this view. Teachers find that uniform teaching prescriptions prevent them from attending to the variable needs of their students and to the conceptual demands of their academic disciplines. In one study, 45 percent of the teachers we interviewed said they would resign from teaching if prescriptiveness of teaching content and methods increased.[30] For them, a non-professional work structure diminished the satisfactions of their work to an unacceptable degree. Future policies ought to respond to the fact that these professional incentives are very important to teachers.

Professionalizing Teaching

The many factors that discourage qualified people from entering and remaining in the teaching profession are converging at a time when teacher retirements and student enrollment trends are leading to increased demand for teachers. As a consequence, it will be necessary to hire and retain large numbers of marginally qualified people into teaching unless major changes are made in the structure of the occupation.

Higher salaries for teachers are only part of the solution to the problem. The non-pecuniary aspects of teaching are at least as important as salaries in attracting and retaining good teachers. (In any case, the public is not likely to support higher salaries if serious efforts are not made to upgrade the perceived quality of the teaching force.) As in other occupations, improved working conditions for teachers are a partial substitute for higher wages. A particularly important aspect of those working conditions is the degree of professionalism allowed in the work structure. Upgrading the quality of teacher preparation and creating more professional working conditions are part of a structural solution, one that attends to the interrelated causes of the problem rather than merely to its symptoms. In fact, teaching is now much like the legal and medical professions were at the turn of the century. Until fundamental changes were made in the structure of these

[29]Linda Darling-Hammond, Arthur E. Wise, and Sara R. Pease, "Teacher Evaluation in the Organizational Context: A Review of the Literature," *Review of Educational Research*, Vol. 53, No. 3, Fall 1983, pp. 285-328; Gage, *The Scientific Basis of the Art of Teaching*, p. 15; Harry S. Broudy, "Teaching--Craft or Profession?," *The Educational Forum*, January 1956, pp. 175-184.

[30]Darling-Hammond and Wise, "Teaching Standards or Standardized Teaching?," p. 69.

professions, they, too, were characterized by low wages, easy access, poor training, no real standards of practice, and a poor public image.

What would it mean to "professionalize" teaching? The following features that characterize most modern professions serve to ensure and allow competent performance:

- Rigorous entry requirements
- Supervised induction
- Autonomous performance
- Peer-defined standards of practice
- Increased responsibility with increased competence

Entry requirements are rigorous because the work requires mastery of a body of knowledge. Induction into the occupation is supervised by experienced practitioners because developing professional judgment means learning how to translate theory into practice. Performance after induction is autonomous because treatment must be tailored to the clientele and their specific needs. Peers define standards of practice because specialized expertise is the basis for informed judgment, and standardized procedures cannot meet the demands of the work. Tying increased responsibility to demonstrated competence is the means by which professional standards of practice are promulgated and conveyed. Experienced practitioners induct new entrants and are responsible for technical decisions.

On the basis of these characteristics, we make the following recommendations for reforming the teaching profession. First, establish professionally competitive salaries for teachers; in the current marketplace, this means starting salaries of $20,000 with career increases of up to $50,000 (the salary level of middle-management school employees). Second, offer recruitment incentives such as scholarships and forgivable loans for academically talented college students to enter teaching, similar to the National Defense and Education Act loans of the 1960s. Third, improve teacher education by making it more intellectually rigorous and requiring internships supervised by senior teachers before tenure is granted. Fourth, improve working conditions by allowing paraprofessionals to assume the non-teaching duties now performed by teachers and by allowing teachers more time to teach, to prepare, and to share in instructional decisionmaking. Fifth, allow experienced teachers to assume responsibilities for supervising new teachers and for developing programs as they move up a more differentiated career ladder with specific evaluation and promotion points. Taken together, these reforms suggest a new career structure in which professionally enforced standards of practice are combined with

increased responsibility for technical decisionmaking by those who successfully demonstrate their competence.

Although these proposals start with higher salaries for teachers, they also imply changes in resource allocations within schools. As bureaucratization took hold in American schools, teacher salaries slipped from 49 percent of educational expenditures in 1972 to only 38 percent in 1982.[31] Changing the teaching career structure would also change administrative structures and roles, and hence the allocation of educational dollars. If teachers were to assume many of the instructional tasks currently performed by administrators (e.g., curriculum development and supervision), the layers of bureaucratic hierarchy could be reduced. Of course, further study will be needed to determine how administrative structures could be changed and to inform strategic planning efforts at the local level. However, we believe that efforts in these directions can lead to a more professional and more instructionally productive approach to schooling as well as to teaching. Reduced bureaucratic accountability demands would allow schools to become more client-oriented; and within a professional accountability structure, teachers could rely on peer support and assistance in working out problems of practice.[32]

Restructuring the teaching occupation is not a trivial undertaking. These proposals entail substantial costs; they are politically difficult, particularly in the light of public perceptions of low teacher quality; and they require some profound organizational changes, which are never easy to initiate. However, there are some opportunities for change that could offset these obvious barriers.

The attention to education generated by the recent commission reports has created a climate for reform that is in fact causing a great many states to entertain new proposals. Several states have already increased teachers' salaries and are trying to implement some kind of teacher incentive program. The coming large-scale retirements of teachers will provide new opportunities in two ways. First, the very

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[31]C. Emily Feistritzer, *The Condition of Teaching: A State by State Analysis*, The Carnegie Foundation for the Advancement of Teaching, 1983, p. 50.

[32]Research on effective schools suggests that collegial settings in which teachers assist each other and solve problems collectively enhance teacher satisfaction and efficacy, along with student learning outcomes. See, for example, Rosenholtz and Smylie, *Teacher Compensation and Career Ladders*; P. T. Ashton, R. B. Webb, and N. Doda, *A Study of Teachers' Sense of Efficacy: Final Report*, The University of Florida, 1983; H. J. Walberg and W. J. Genova, "Staff, School, and Workshop Influences on Knowledge Use in Educational Improvement Efforts," *Journal of Educational Research*, Vol. 76, 1982, pp. 67–80; Wilbur Brookover, *Schools Can Make a Difference*, Michigan State University, 1977; Paul Berman and Milbrey W. McLaughlin, *Federal Programs Supporting Educational Change, Vol. 7: Factors Affecting Implementation and Continuation*, The Rand Corporation, R-1589/7-HEW, April 1977.

experienced, expensive teachers will be replaced with less expensive teachers, so that the costs of upgrading salaries can be absorbed over a longer period of time. Second, it is more feasible and cost-effective to restructure induction into the profession when a major change in the membership of the work force is occurring. Finally, the costs of the reforms are not as enormous as they might at first appear. As noted above, some reallocation of resources is implicit in a new career structure. Furthermore, as fewer of the educational dollars have been spent on teachers over the last decade, fewer dollars have also been spent on education. Public elementary and secondary education expenditures droppod from 5.5 percent of personal income to 4.6 percent between 1972 and 1982.[33] We can, if we choose, return to a higher level of commitment to education.

In addition to asking about the barriers and opportunities for significant reforms, we should also ask what the alternatives are. If we choose to ignore the structural problems of the teaching profession, we will in a very few years face shortages of qualified teachers in virtually every subject area. We will be forced to hire the least academically able students to fill these vacancies, and they will become the tenured teaching force for the next two generations of American school children.

If we are serious about improving the quality of education, we will have to make more than marginal changes in the attractiveness of the teaching profession. The search for excellence as it is being conducted in most states will not solve the problem. Fundamental reform of the teaching profession will be required.

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[33]Feistritzer, *The Condition of Teaching*, pp. 51-52.