DOCUMENT RESUME

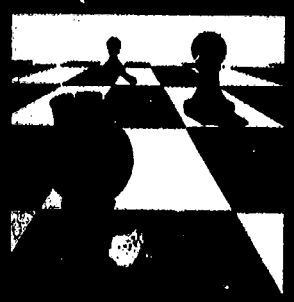
ED 316 517 SP 031 997

TITLE	Teacher Supply & Demand Guidebook. Strategic Planning for Association Program Development.
INSTITUTION	National Education Association, Washington, D.C.
PUB DATE	87
NOTE	36p.; Tables in colored boxes may not reproduce clearly.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Elementary Secondary Education; Minority Group Teachers; *Policy Formation; *Program Development; *Teacher Certification; *Teacher Retirement; Teacher Salaries; *Teacher Supply and Demand; Teaching Conditions

ABSTRACT

This guidebook identifies supply and demand concepts and gives examples of how some National Education Association state and local affiliates are addressing the teacher supply and demand issue. While not intended as a how-to manual for conducting full-scale teacher supply and demand studies, the book focuses on some of the problems associated with current teacher supply and demand projections and suggests some teacher labor market issues and ideas that affiliates can pursue. Six tables are included. (JD)

NATIONAL EDUCATION ASSOCIATION



TEACHER SUPPLY & DEMAND GUIDEBOOK

STRATEGIC PLANNING FOR ASSOCIATION PROGRAM DEVELOPMENT

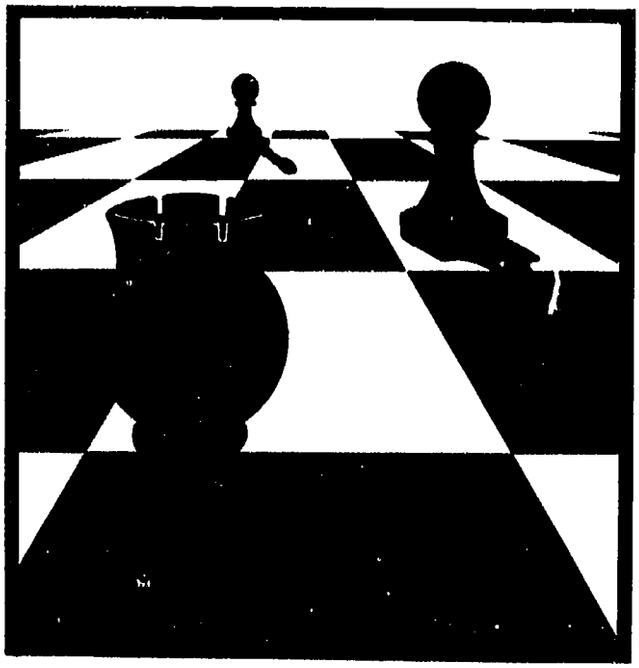
Professional and Organizational Development/Research Division

2

NATIONAL EDUCATION ASSOCIATION

1201 16th Street, N.W., Washington, DC 20036

Professional and Organizational Development/Research Division



TEACHER SUPPLY & DEMAND GUIDEBOOK

STRATEGIC PLANNING FOR ASSOCIATION PROGRAM DEVELOPMENT

CONTENTS

"While questions about teacher supply and demand can be examined empirically, issues of teacher shortage are ultimately political."

—Linda Darling-Hammond (1987)
RAND Corporation

FOREWORD

This guidebook intends to meet three objectives:

1. Provide a general understanding of the teacher shortage issue
2. Focus on some of the problems associated with current teacher supply and demand projections
3. Suggest some teacher labor market issues and ideas that affiliates can pursue.

This publication is not meant to be a how-to manual for conducting a full-scale teacher supply and demand study. The reality is that resources, time, and data availability prohibit such a study from being completed by most state and local affiliates.

Currently, there is a great deal of debate about teacher shortages. The possible existence, expectation, severity, and nature of a teacher shortage are all points of contention. If teacher shortages are acknowledged, then solutions for alleviating or preventing a shortage will cause debate. Teachers must participate in these debates to protect their interests, their profession, and the quality of education received by their students.

State and local affiliates have available to them a wide range of actions regarding teacher labor market issues. They include activities that—

- ☐ Pressure state agencies to gather and compile better supply and demand data.
- ☐ Monitor and react to detrimental stopgap policies such as emergency certification.
- ☐ Promote productive, long-term solutions to shortages such as increased compensation and better conditions of work.
- ☐ Criticize reports that misrepresent the teacher labor market situation.
- ☐ Analyze individual behavioral factors such as why teachers leave the profession.

The guidebook gives examples of how some NEA state and local affiliates are addressing the teacher supply and demand issues.

Inquiries regarding the contents of this publication may be directed to Edward Hurley of the NEA Research Staff.

WILL THERE BE A SHORTAGE OF TEACHERS?

"Should increasing numbers of college students choose careers in occupations other than teaching because of better salaries and working conditions, then the shortage of new teacher graduates could become more severe."

—National Center for Education Statistics (1985)
U.S.Department of Education

"Indications, therefore, are that no shortage of teachers will develop."

—Daniel Hecker (1986)
Division of Occupational Outlook
Bureau of Labor Statistics

"After years of teacher surplus, in 1985 jobs and job seekers were roughly in balance. For at least the ext 10 years, however, there will be more jobs than applicants."

—Carnegie Forum on Education and the Economy (1986)

"... contrary to predictions, there seems to be no problem finding enough qualified teachers to meet demand."

—Emily Feistritzer (1986)
National Center for Education Information

"Contrary to what many modern-day educators tend to assume, teacher shortages have been commonplace throughout the twentieth century."

—Michael Sedlak and Steven Schlossman (1986)
Center for the Study of the Teaching Profession
RAND Corporation

"NOT QUANTITY BUT QUALITY"

Policies designed to alleviate shortages require an understanding of the nature of the shortage. In general parlance, shortage means not enough teachers. A shortage in economic terms occurs when the number of individuals with *desired qualifications* who are willing to offer their services as teachers at a wage the schools are offering falls short of the number of teaching openings that exist.

"Desired qualifications" dictate the shortage perception. The degree to which a shortage exists depends upon what is being measured. For instance, here are three different measures of teacher shortage:

- ☐ Number of unfilled positions
- ☐ Number of uncertified* teachers
- ☐ Number of misassigned teachers.

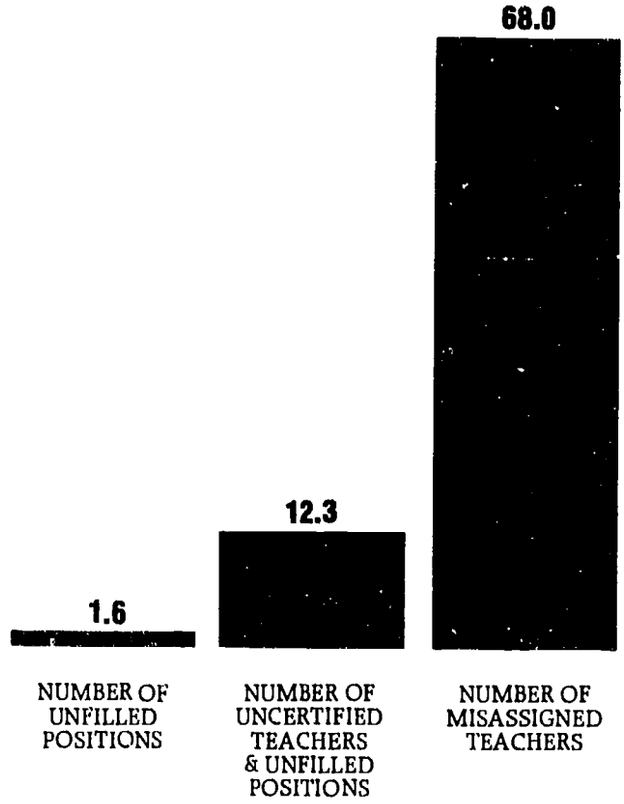
The shortage measure that is utilized can give results ranging from a disturbing situation to a "no cause for alarm" scenario. Figure A illustrates how the results of the three measures listed above differ.

Number of unfilled positions, number of uncertified teachers, and number of misassigned teachers are countable and can be monitored. It should also be recognized that a shortage of teachers can be described in more qualitative terms: a lack of individuals having the dedication and motivation to teach, a genuine empathy with students, and the skills needed to carry out the responsibilities of effective teaching.

The argument over the teacher shortage is an argument about the definition of teacher. The NEA insists that all professional teaching positions be filled by fully certified individuals while it simultaneously attempts to have significant influence in defining the criteria that constitute a certified teacher.

"Not quantity but quality" must be the paramount guideline for any teacher supply and demand policy. NEA affiliates can serve both as promoters and watchdogs of this principle.

Figure A



* Refer to notes on page 30.

THE COMPONENTS OF TEACHER SUPPLY AND DEMAND

The Nature of Teacher Supply and Demand

Any supply and demand profile at the national level can mask differences between individual states. Even a state supply and demand profile can be accompanied by substantial surpluses and shortages of well-qualified teachers at the local level because of varying conditions of work, compensation, and quality of life among districts. For instance, rural and inner-city schools have a particularly difficult time finding and keeping qualified teachers.

Demand Components

A number of components combine to determine the number of additional teachers needed to be hired in any given school year. If supply and demand are initially in balance (there are exactly enough qualified individuals willing to fill vacant positions at current salaries), any change in the following components should cause a change in the number of teachers needed:

1. *Enrollment Projections.* If average class size remains constant, an increase in student enrollment will result in an increased need for teachers. The National Center for Education Statistics (1985) projects that from now through 1993 public school enrollment should increase nationally by about 7 percent.
2. *Retirement Rate.* As teachers retire, they must be replaced. When retirement rates accelerate, as is currently predicted in many states, then the need for new teachers will increase.
3. *Class Size.* The number of students assigned to a teacher has a direct effect on the total demand for teachers. Enrollment increases can be absorbed by making class sizes larger instead of hiring more teachers. If more individualized instruction is required, smaller class sizes and additional teachers will also be required.
4. *Attrition.* Teachers may leave their teaching positions for reasons other than retirement. For example, they may take teaching positions in other schools or districts, become school administrators, pursue other occupations, or devote time to raising a family. New teachers must be found to take their place.
5. *Graduation Requirements.* Higher graduation standards usually mean more individualized instruction, and additional requirements mean additional classes to teach. More teachers are needed to help all students meet the additional requirements and higher standards.

Table 1 summarizes the effect of a change in the various demand components on the need for teachers. The depicted change for each variable is made with the assumption that other demand variables do not change and that teacher quality is not compromised.

TABLE 1.
CHANGES IN TEACHER DEMAND

Teacher supply and demand should be addressed primarily at the state and local levels, not only because of different situations among states and districts, but also because most teacher labor market related policy is set at state and local levels.

The degree to which teacher shortages exist also varies *within* individual schools. Shortage areas that deserve special attention include—

- ☐ *Minority Teachers.* Minority teachers are diminishing at a time when minority-group children are the fastest growing segment of the nation's public school population. One projection finds that in 1990 only 5 percent of the nation's teaching force will be members of a minority group, down from about 12.5 percent in 1980 (Rodman, 1985). Black and Hispanic K-12 student enrollment was approximately 24.2 percent of total student enrollment in 1980 and is expected to be 26.3 percent of total student enrollment by 1990 (U.S. Department of Commerce, 1987).
- ☐ *Specialty Subject Teachers.* Positions in certain secondary school subjects are more difficult to fill than other teaching positions. Most notably, mathematics, science, and bilingual education are three areas in which finding qualified teachers has continually proved difficult.

A shortage of teachers will exist until a well-trained, knowledgeable, and dedicated teacher can be placed in *every* classroom. No district should be faced with perpetual teacher shortages that hinder the quality of education for their students.

Supply Components

The supply of teachers refers to the number of qualified individuals willing to provide their services as teachers *at current compensation levels and under present conditions of work.*

1. *College Graduates.* The number of teachers newly prepared to teach represents a segment of teacher supply. A certain percentage of recent college graduates have the required training and coursework to become beginning teachers. A percentage of these individuals actively search for a teaching job.
2. *Reserve Pool of Teachers.* The reserve pool of teachers includes individuals who are qualified to teach but are presently not teaching. It includes individuals who received training but never became teachers, former teachers who left teaching to pursue other occupations, former teachers who left teaching to raise families, teachers who moved to other districts without the promise of a job, and teachers who lost their jobs due to retrenchment. Only a small fraction of the total reserve pool are willing to teach at current compensation levels and under existing conditions of work. This small fraction can be counted as supply. The majority of the reserve pool represents only *potential* supply.

THE BOTTLE AND THE BUCKET

Figure B illustrates the teacher supply and demand components.

Pictured are a bucket filled with water and a bottle. The *water in the bucket* represents the total population of teachers currently working.

The *bottle* holds the potential supply of qualified teachers. This supply represents recent college graduates and reserve pool members.

The *bucket* represents the total demand for teachers. The size of the bucket is primarily dependent on student enrollment, pupil-teacher ratios, and student graduation standards. The bucket needs to be full for teacher supply and demand to be in balance. A less-than-full bucket represents a shortage of teachers. An overflowing bucket represents a surplus.

The *flow of water* from the bottle to the bucket represents the number of individuals actively seeking teaching positions. The *leaking of water* from the hole in the bottom of the bucket represents teachers leaving the profession. If the bucket is to remain filled to capacity (teacher supply and demand are in balance), then the amount of water flowing from the bottle must equal the amount of water leaking from the bottom of the bucket.

The size of the bucket becomes larger when enrollment increases, average class size declines, tougher graduation standards are implemented, or some combination of these changes occurs. With a larger bucket, the flow from the bottle needs to exceed the leak from the bucket to maintain a supply/demand balance.

The flow of water both into and out of the bucket depends on the "tilt" of the bottle and the size of the leak. The tilt of the bottle determines the propensity of new college graduates and reserve pool teachers to actively seek teaching positions. The size of the leak determines the rate at which individuals leave the teaching profession either permanently or temporarily.

The *purity of the water* is the equivalent of teacher quality. *Filtration* is the setting of standards. Filtration lets the clean water into the bucket and keeps the "polluted" water out. One way to fill the bucket when not enough water is flowing from the bottle is to remove the filter and augment the clean water with polluted water (i.e., emergency certificates and misassignments).

FIGURE B

BEHAVIORAL FACTORS

"Although it is nothing more than a commonplace, it needs to be emphasized that the supply of qualified teachers relates directly to the attractiveness of teaching careers."

--Panel on Statistics on Supply and Demand for Precollege Science and Mathematics Teachers, National Research Council (1987)

There are a number of factors that influence the quantity of individuals willing to teach (help determine the tilt of the bottle). The teacher behavioral factors include--

1. Compensation
   - ☐ Beginning salary
   - ☐ Career earnings
   - ☐ Employee benefits
2. Conditions of Work (Job Satisfaction)
   - ☐ Hours of work
   - ☐ Job resources
   - ☐ Administrative support
   - ☐ Decision-making discretion
   - ☐ Amount of stress
   - ☐ Orderly environment
3. Job Availability (Regional Unemployment Rate)
4. Cost of Educational Training Requirements
   - ☐ Loan forgiveness
   - ☐ Scholarships
   - ☐ Tuition reimbursements
5. State and Local Educational Staffing Policies
   - ☐ Alternative certification
   - ☐ Emergency certification
   - ☐ Misassignments
   - ☐ Part-time employment policy
   - ☐ Early retirement policy.

The above factors affect primarily the future supply of teachers. Some of these behavioral factors also affect the attrition rate (usually referred to as a demand variable). Conditions of work, careers earnings, and early retirement policies are examples of factors that influence the propensity for teachers to leave the profession (the size of the leak).

Compensation. Increasing the level of teacher salaries, both beginning salaries and salaries throughout a teaching career, and providing more employee benefits should increase the supply of individuals who are willing to become teachers. The increased salaries and benefits must be relative to the salaries and benefits of other occupations requiring a college education. If salaries and benefits for teachers increase at the same rate as they do in comparable occupations, the net result theoretically would be no change in the potential supply of individuals willing to teach.

An increase in compensation relative to other professions will tilt the bottle at more of an angle, causing more college students to examine teaching as a possible career and enticing more certificated individuals out of the reserve pool and into the classroom. Recent U.S. Department of Labor figures suggest that, nationwide, teacher salaries are *beginning* to increase at a faster rate than salaries for other occupations. If such a trend continues, the teaching profession will be able to attract the additional qualified individuals needed to improve educational quality.

Higher salaries and benefits will also slow down attrition (reduce the leak). Teachers will be less likely to switch to selling real estate or becoming business managers when they can stop worrying about making a decent living.

Conditions of Work. Individuals care about the quality of their work environment as well as the monetary rewards associated with particular employment alternatives. If the intrinsic rewards of teaching are enhanced, the primary result will be a decrease in the attrition rate. Polls have demonstrated that many teachers leave the occupation or transfer to a different school because conditions of work negatively affect their professional performance (e.g., see Louis Harris and Associates, 1985).

Job Availability. If unemployment exists, an occupation that needs employees will be able to attract some qualified people just on the basis of job availability. Presently, the number of college students nationwide indicating an interest in teaching has slightly increased because of this fact. Recent media publicity about a impending teacher shortage will help somewhat to increase teacher supply.

In addition, the unemployment rate affects attrition rates. During periods of significant unemployment, teachers are less likely to leave their jobs because of fears about not being rehired or because jobs in alternative occupations are scarce.

Cost of Educational Training Requirements. College students who pay for their education make an investment with an expectation that they will receive a future return on that investment. The cost of a college education has increased dramatically during the past 10 years. Students are accumulating large debts. In some cases, because of burdensome loan payments, graduates are avoiding the lower paying careers, such as teaching, to pursue more lucrative jobs.

Loan forgiveness, scholarships, and tuition reimbursements for students interested in teaching are policies that would reduce the costs of training. These policies would have a positive, albeit small, effect on the supply of new graduates looking for teaching positions.

State and Local Educational Staffing Policies. State and local school staffing policies are external institutional forces introduced into the teacher labor market. Most policies aimed at teacher supply are implemented to ensure that there are enough employees to fill classrooms. Policies allowing for emergency certification, alternative certification, and misassignments do increase teacher supply. However, the increase does not suggest a tilt of the bottle but rather an inflow of polluted water. This water is tainted because it represents a lowering of professional standards. Less-than-qualified people are allowed into the teaching ranks.

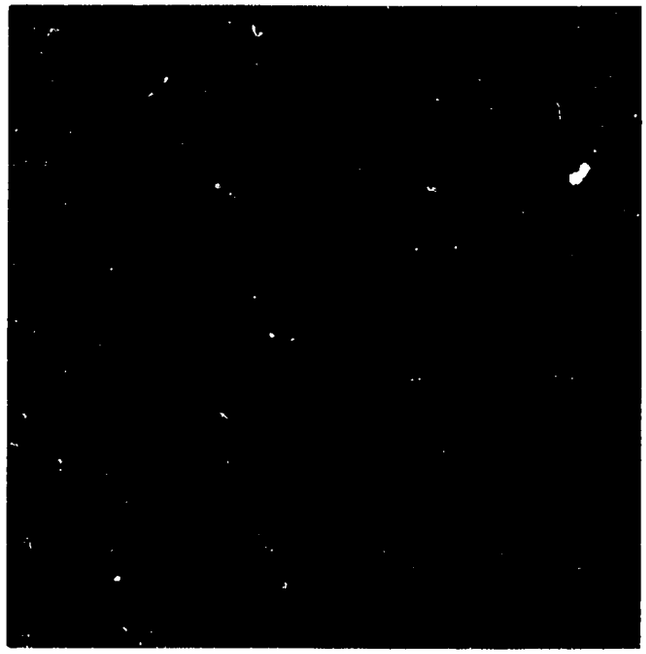
From where do these harmful policies emanate? Alternative certification procedures are directly controlled by a state agency. A 1986 survey indicated that 26 states had alternative certification programs (American Association of Colleges for Teacher Education, 1986).

Emergency certificates are issued by state agencies, but local districts have the discretion of making the request (Roth, 1986). Assigning teachers to classes is done within state guidelines (if they exist), but local administrators have a great deal of clout in the process (Roth, 1986). In many states, misassignment of teachers is legal. In states having guidelines, illegal misassignments usually occur without detection (Robinson, 1985).

A less harmful means of increasing the supply of teachers is for districts to implement part-time and shared-time teacher policies. A portion of the fully certified teachers in the reserve pool, especially homemakers, would return to teaching if flexible schedules were to be provided. In addition, current teachers planning to leave their jobs to raise a family may want to stay on a part-time basis.

Early retirement plans induce veteran teachers to leave the profession before their normal retirement date. Such plans are a help in reducing a surplus of teachers. In a shortage period such policies contribute to the lack of qualified teachers. Gary Watts, NEA Assistant Executive Director, suggests that retirement policies be adjusted so that recently retired teachers could continue to receive their full retirement benefits and still earn a regular teaching salary. The extra monetary incentive would help retain staff eligible for retirement and also attract retirees back into teaching (Watts, 1986).

TABLE 2.
TEACHER SUPPLY AND DEMAND: CAUSES AND EFFECTS



THE ROLE OF STATE AND LOCAL AFFILIATES

Teacher labor market theory presents a useful tool for state and local affiliates to advocate for much needed changes in the educational arena. A great deal of debate will center around the means for solving the shortage. The solutions will have a substantial impact on the teaching profession.

A national perspective of the teacher labor market is valuable because it serves to summarize the *general* trends of teacher supply and teacher demand. But it's like the weather: While it may be winter across the nation, the local picture shows a wide variety of temperatures and precipitation. Because teacher supply and demand is so localized, to estimate the degree to which a shortage does or does not exist, why it exists, and what can be done about it, optimally it should be researched at the state and local levels.

Three general approaches can be taken that address the teacher supply and demand issue:

1. *Monitoring.* State and local affiliates can serve a watchdog function by checking to see if school districts are compromising educational quality through the use of detrimental staffing practices. The monitoring operation would produce descriptive statistics about key indicators of school staffing policies and practices.
2. *Projections.* State and local affiliates can help create an awareness of the possibility of critical teacher shortages in the coming years. If resources and data are available, affiliates can make their own in-house projections of individual demand and supply components, some combination of components, or possibly project a complete supply and demand outlook.

   An increasing number of state governments and public policy institutions are issuing reports that attempt to project teacher supply and demand years into the future. These reports can prove useful for advocacy purposes, although they should be carefully scrutinized. Teacher supply and demand projections are only as valid as the assumptions on which they are based.
3. *Analysis.* State and local affiliates can advocate constructive solutions to the teacher shortage. Establishing behavioral content in the supply and demand arena can lead policymakers to appropriate remedies.

Promoting greater teacher compensation and better conditions of work as solutions to the shortage requires convincing data. Data can be collected that establish causality among supply and demand variables.

A sequence of steps should be followed to make any of the three approaches to teacher supply and demand operational:

- ☐ Establish the purpose of the analysis.
- ☐ Collect enough data to construct a current profile.
- ☐ If possible, collect historical data that may point to significant trends.
- ☐ Evaluate and interpret the data.
- ☐ If so warranted, create an awareness about an alarming situation.
- ☐ Advocate for constructive solutions.

MONITORING SUPPLY AND DEMAND

Teacher Staffing Practices. The number of teachers with emergency certificates combined with the number of teachers who are teaching out-of-field can be a fairly good representation of current teacher shortages, especially in specific fields. When positions are difficult to fill in a particular field, it can be expected that teachers not certified in that field will be commonly used to fill vacancies. An approach should be taken to document and publicize the number of teachers who are misassigned in each district in the state and to document and publicize the number of noncertificated teachers in each district in the state.

A monitoring approach would serve the long-term interests of the educational system, its students, and the general public by serving two purposes:

1. The publicity increases the pressure on state legislatures and school districts to raise teachers' salaries and improve conditions of work. Such initiatives would attract larger numbers of well-qualified young people into the profession.
2. Attracting more well-qualified individuals into teaching increases public confidence in the abilities of teachers and in the profession as a whole, thereby affording some hope of sustaining the pressure for high salaries and salary growth beyond the period of immediate shortage.

Assemblage of Data. Data need to be gathered relating teacher assignments to teacher qualifications. Examples of questions relating to staffing practices might be—

- ☐ How much control does the principal have over defining and filling vacancies?
- ☐ How many vacancies were difficult to fill or were not filled?

- ☐ How were vacancies filled? Were uncertified teachers hired? Were class sizes increased? Were current teachers reassigned to classes that they had not previously taught?

Determining the number of teachers who are misassigned requires a working definition of the relationship between certification areas and teaching fields. It is not always clear from one's teaching certificate which courses may be legitimately taught.

Judgmental decisions on what constitutes a misassigned teacher have to be made when drawing conclusions about a possible shortage. For instance, in small rural schools, teachers often cover diverse subject areas, some of which do not fall within their area of certification. Such a situation may be a consequence of the way a rural school organization must be structured rather than representing a teacher shortage problem.

PROJECTING SUPPLY AND DEMAND

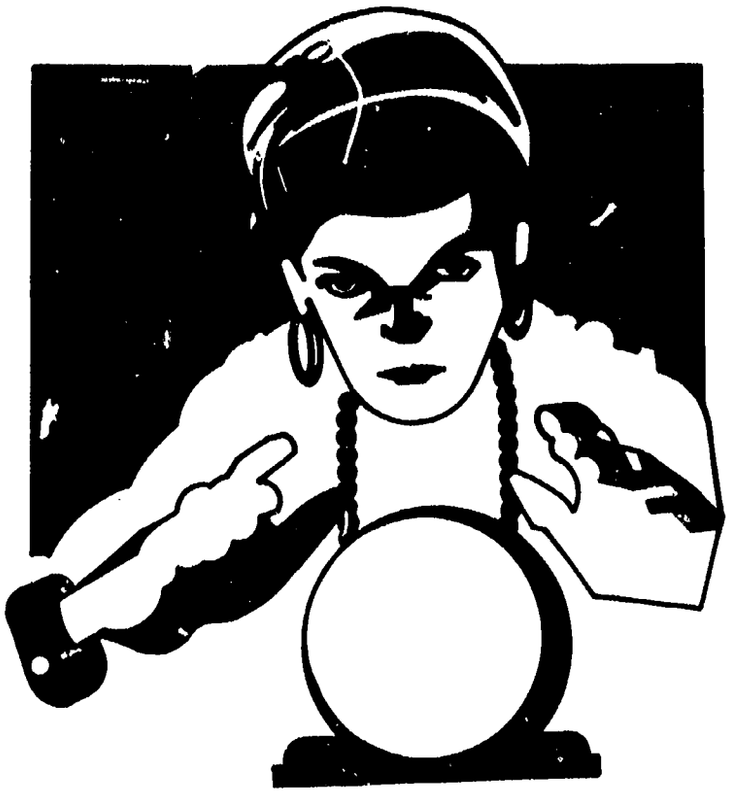
Looking Into the Future

From a policy perspective, it is important to have an impression about the future need for teachers as well as a foresight about whether this need can be met. Given the relatively small percentage of college students currently training to become new teachers, the greater the need for additional teachers in the future, the better the chances that overall teacher quality will slip unless compensation and conditions of work are improved.

An affiliate basically has four options when considering the use of supply and demand projections for advocacy purposes. First, if the data, time, and resources are available, the affiliate can do or contract to do a comprehensive teacher supply and demand study. By presenting possible teacher shortage scenarios five and ten years into the future based on accurate data and feasible assumptions, the study can cause a realization among the general public and public officials that unless remedial measures are implemented, there simply will not be enough qualified teachers to instruct the coming generation.

The second option is to concentrate on projections for one or two of the demand variables. Data availability primarily defines the feasibility of making projections. If data are not available to produce a comprehensive supply and demand study (which is probably true in a majority of the states), then choosing a variable for which data do exist and then making future projections for that variable alone can still prove useful.

Although a possible future teacher shortage is not quantified with this second option, the projection of an individual shortage variable, such as enrollment, can still provide evidence to policymakers that constructive long-term staffing policies urgently need to be considered. For a district experiencing significant population growth, enrollment projections take on critical importance. In the same vein, the value of retirement



projections escalates for states with a relatively experienced teacher population.

The third option is for affiliates to use existing teacher supply and demand studies for advocacy purposes. Due to increasing concern about a lack of teachers, more and more government and academic institutions are studying the supply and demand situation in their state. Some studies may provide valuable evidence of a looming state or local teacher shortage. Other studies may make dubious assumptions, use poor methodology, and misrepresent the present as well as the future supply and demand picture. Affiliates should be openly critical of studies that have little reason for drawing a conclusion.

The final option for affiliates is to avoid projections altogether. The severe limitations imposed by a lack of accessible data, the time involved, the cost, and questionable validity of the results may dissuade the use of supply and demand projections for advocacy purposes. The alternative to supply and demand projections are supply and demand relationships, which is a topic discussed later in this guidebook.

Projections vs. Predictions

It is important to understand the difference between a projection and a prediction and the implications of that difference. In terms of teacher supply and demand, a projection is an estimate of the possibility and severity of a teacher shortage in the future, based on current or past trends. Present teacher supply and demand relationships are "projected" forward to determine if a teacher shortage *could* develop in the future.

A prediction is a more positive statement. "A teacher shortage *will* occur by 1990" represents a prediction. Predictions are made based on observation, analysis, and scientific reasoning. Enrollment levels and retirement rates can be projected with good "predictive" accuracy. Future attrition rates or the numbers of students enrolling in teacher education programs in 1990 are projections with very little "predictive" power. None of the teacher supply and demand models used by state education agencies have any predictive power because they base their shortage prognoses on current or past teacher supply and attrition trends.

Due to current limitations of knowledge and methodology, only teacher shortage projections can be made. It would be nice to be able to predict, for instance, how many qualified individuals in the reserve pool would offer their services as teachers if teacher salaries were increased by 10 percent, but such research is only in its infancy. Current projections should not be judged by their eventual accuracy as predictions. The value of projections is that they can depict the possible consequences of keeping the status quo.

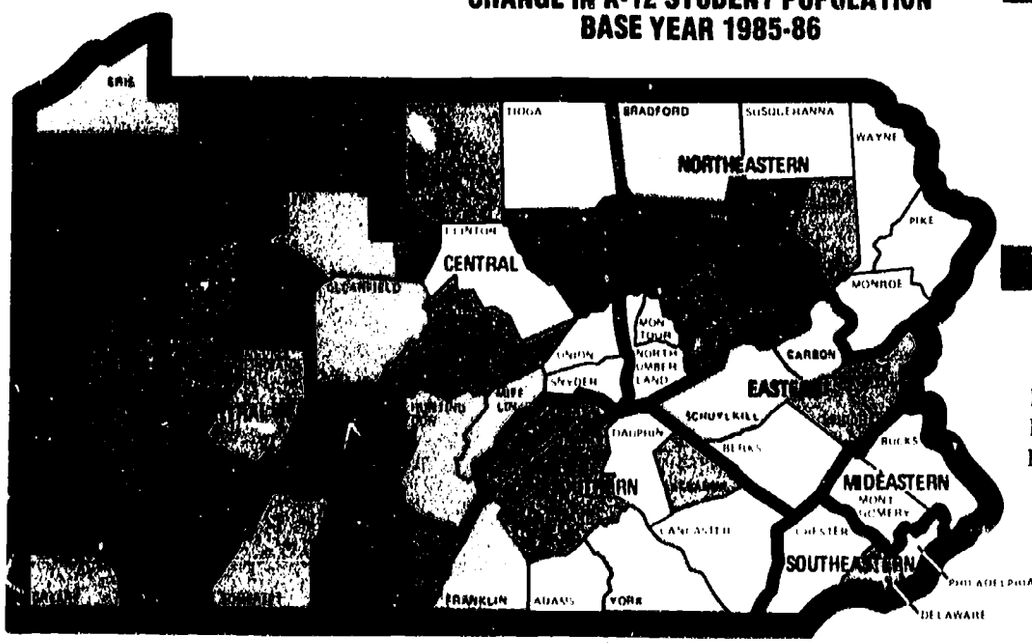
Projecting Demand

Many assumptions are made about the individual demand variables when projecting teacher demand. The assumptions, many of which are grounded in opinions of what constitutes appropriate educational conditions, deserve particularly close attention when making projections or reviewing other models. Provided below is a brief discussion of the various demand variables.

Enrollments. Many state and local agencies or institutions make population projections by age and/or enrollment projections, years into the future (see, for example, Figure C). Such projections are valuable for determining in which geographical areas teachers will be needed.

FIGURE C

2000-01 PROJECTION
CHANGE IN K-12 STUDENT POPULATION
BASE YEAR 1985-86



Type I
increase over 10%

Type II
increase between 0.1 and 9.9

Type III
decrease between 0.1 to 9.9

Type IV
decrease over 10%

FROM: *Voice*, January 19, 1987, Pennsylvania State Education Association

13

SOURCES: Pennsylvania State Population Research Center of the Pennsylvania State University
Pennsylvania Department of Education PSEA Research Department

Enrollment projections are usually on target. They are based on fertility rates, migration trends, historical analysis of birth cohort-to-grade survival rates, and grade-to-grade retention patterns. Future changes in parental preferences for private versus public schooling and changes in dropout rates are the most likely events disturbing enrollment projections.

Pupil-Teacher Ratios. Once increased enrollment is projected, it is divided by a pupil-teacher ratio to calculate how many additional teachers will be needed to meet that additional enrollment. Many of the teacher supply and demand studies assume that the current pupil-teacher ratio reflects the number of teachers demanded per pupil. This can be an important point of contention when reviewing demand projections.

A slight change in the pupil-teacher ratio used to project demand can bring about a significant change in the projected number of teachers demanded. Affiliates should set their own groundrules as to what pupil-teacher ratio should be used in the demand calculation. A pupil-teacher ratio that reflects the realities of the classroom and educational improvement will then *optimally* reflect the number of teachers per pupil demanded.

Retirement Rates. The rate at which teachers leave the profession due to retirement can in most cases be projected accurately . There exists a correlation between the retirement rate and age/experience of teachers. A district that has a disproportional number of experienced teachers should have an accelerating retirement rate in the near future. Age and experience of the teaching force can be gauged by examining survey data or state pension records.

The rate at which administrators retire can also be an important variable. Many teachers eventually become administrators. If the administrator retirement rate accelerates, more teachers will be moving to fill these vacancies which in turn will increase the number of teacher vacancies.

Turnover Rates. A significant component of teacher supply and demand is the rate at which teachers leave their jobs prior to being eligible for retirement. Turnover is one of the most questionable pieces of information in current teacher supply and demand studies. Most methodologies employ a single assumption about the turnover rate and use either a number based on the current year's rate or a rate reflecting a turnover trend during a number of past years.

Turnover is a function of many factors, among them being age, experience, gender, and subject taught. As the composition of these factors change in the future, so will the turnover rate. For example, as the retirement rate accelerates, increasing numbers of younger teachers will be hired to replace the experienced retiring teachers. Turnover is significantly higher for teachers in their first five years of employment. Based on just this particular factor, the future turnover rate should be higher than the present rate.

There is a great deal of research to be accomplished on turnover rate patterns and their causes. Some of this research is important for advocacy purposes and will be discussed in an upcoming section on analyzing turnover.

Educational Reform Measures. One of the main goals of the recent educational reform movement is the implementation of more stringent high school graduation standards. Imposed and proposed standards in many states require additional classes in certain subject areas and more individualized instruction. If increased class sizes are to be prevented, educational reform will require more teachers, and most supply and demand studies ignore such future reform scenarios in their calculations.

Educational reform policies should be carefully monitored. They may look beneficial at first glance, but without the needed resources in place—more teachers for instance—reform policies could be self-defeating. State and local affiliates should be prepared to sound an alarm over proposed "educational excellence" policies that are potential follies because the resources needed to make these policies work are being ignored.

Emergency Certification and Misassignments. Many teacher supply and demand studies do not account for the number of teachers currently employed with emergency credentials, or who are teaching out-of-field. As previously mentioned, teachers who are not fully credentialed in the field in which they teach represent a compromise of educational quality.

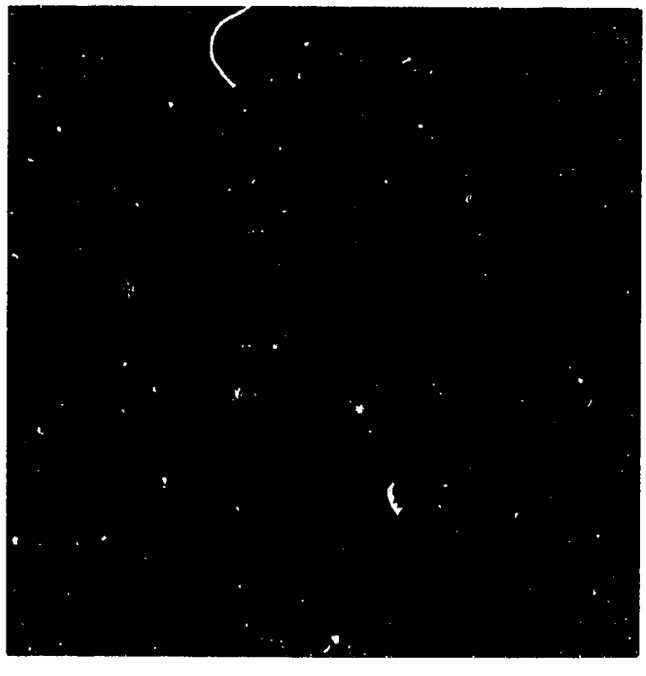
Projected teacher demand should include that number of teachers needed if emergency credentials are no longer allowed. If 300 members of the current teaching force have emergency certificates, then 300 should be added to the total number of additional teachers demanded. The number of additional teachers needed to replace emergency credentialed teachers could be reduced if emergency credentialed teachers fulfilled the certification requirements within a one-year time frame.

Integrating out-of-field teaching into the demand projections requires a definition of the degree to which teachers are outside their area of certification. If on average the total number of out-of-field teachers spend 50 percent of their time in areas outside their certification field, then the number of additional teachers needed will be half of the total number of out-of-field teachers. For example, if 800 teachers are spending on average 50 percent of their time in subjects for which they aren't certified, then 400 should be added to the total number of additional teachers demanded.

Table 3 presents an example of a typical methodology used by analysts to project teacher demand. The numbers are purely hypothetical and are provided only to demonstrate the process by which a total number of additional teachers needed is reached. Table 3 shows a projection one year into the future. Conventional supply and demand models usually project five and ten years into the future.

TABLE 3.
PROJECTING DEMAND
ONE YEAR INTO THE FUTURE

CURRENT DATA: **250,000 students**
10,600 full-time teachers



First, the number of additional students to be enrolled next year in addition to the current student population is calculated. In this hypothetical example the student population is projected to increase 4 percent, from 250,000 to 260,000.

The additional 10,000 students is then divided by 23.6, the hypothetical current pupil-teacher ratio. The result indicates that 424 more full-time teachers need to be hired to meet the increased enrollment.

To the 424 figure is added another 424 teachers needed to replace those who will retire during the next year (assumed to be 4 percent of the teaching force) and 636 teachers to replace individuals who will leave teaching for reasons other than retirement (assumed to be 6 percent of the teaching force).

In this example, a total of 1,484 additional teachers will need to be hired next year if the assumptions hold true. As in many demand projections, additional teachers needed to meet educational reform measures and additional teachers needed to replace those with emergency credentials have inappropriately been left out of the calculations.

Projecting Supply

Supply projections are usually enveloped in confusion and controversy. Theoretically, supply should be defined as the number of qualified individuals who are willing to work as teachers at prevailing salary levels and under present working conditions. Practically, this is a very difficult number to calculate.

The critical supply questions when making projections concern the definition of "qualified" supply and the propensities of individuals, both new teacher graduates and reserve pool members, to enter the teaching force. The best answers are to insist that only fully certified individuals can be defined as potential teacher supply and to assume that current teacher supply propensities will exist in the future. The latter assumption is based on the belief that unless teaching presents itself as a relatively more attractive profession, the willingness of qualified people to enter or reenter teaching will not increase from year to year.

Three supply variables used most often in supply and demand models are discussed briefly below.

New Teachers Without Experience. The number of newly trained individuals who want to teach is one important source of supply. Projections of this number have usually been based on either of three pieces of data: students enrolled in college education programs within the state, new graduates of teacher training programs, or newly certified teachers.

Whatever the statistic used, it must be adjusted by some percentage to account for the fact that a substantial number of potential teachers either lose interest in teaching as a career, do not meet the licensing requirements for becoming a teacher, choose to delay their entrance into teaching, or migrate to other states. Not all students graduate, not all graduates become certified, and not all certified individuals apply for teaching positions within a state.

The percentage adjustment used to calculate a projection is usually based on the current percentage of potential new supply seeking

teaching jobs. By using the current propensity to pursue a teaching job, the calculated projected supply number theoretically should reflect a condition of no improvement in the attractiveness of teaching as a career.

Most models use the number of individuals hired as a measurement of current supply when making projections. A supply number ideally represents the number of qualified individuals actually desiring to be hired as a teacher. If the number of people currently looking for teaching jobs exceeds the number of jobs available, then a supply calculation based on number of people hired will be understated.

A countervailing factor is the geographical immobility of many teacher candidates. On a state level, the total number of graduates seeking teaching jobs may exceed the number of jobs available, suggesting an oversupply of teacher graduates. However, this oversupply could be concentrated in a few high-paying districts in the state, thereby masking shortages throughout most districts in the state. If college graduates looking for teaching jobs cannot be attracted to districts needing teachers, then a state shortage problem will persist.

Teachers Moving from Other States. Credentialed individuals arrive from other states looking for teaching jobs and become part of teacher supply. They may move across state lines to follow a spouse, to pursue better opportunities, or for other reasons. They can be newly certified individuals or veteran teachers.

Projecting the number of teachers entering from other states and adding to total future supply is mostly conjecture. The variables that influence interstate movement are numerous and complicated. The most common technique is to use the number of teachers who came from out of state during the most recent year as the number who will come from out of state in future years.

The Reserve Pool. The reserve pool represents the number of people presently not teaching but who may do so in the future. Some think the reserve pool will be the solution of any possible teacher shortage. More than half of the teachers presently being hired are from the reserve pool (National Education Association, 1987).

The reserve pool is defined differently, depending on hiring practices. In some states, everyone with a bachelor's degree is potentially in the supply pool. Retired military personnel and retired corporate scientists are starting to be included as members of the reserve pool. It is imperative that state and local affiliates scrutinize the boundaries that define the reserve pool in teacher supply and demand studies. The reserve pool should be limited to those individuals with valid, up-to-date credentials.

The methodology for projecting future supply from the reserve pool is comprised of two steps. The first is to determine the size of the reserve pool, and that should be only the number of people with valid credentials who are available to teach. The second step is to determine the number of reserve pool members who are likely to apply for teaching jobs.

It may be fairly easy to find from state files the number of individuals that have valid teaching credentials. What is not easy is determining the number available to teach. From the total number of individuals on file with valid teaching credentials should be subtracted individuals who are current public school teachers, private school teachers with credentials, persons who have retired, died, or become disabled, and individuals who have moved away from the state. The net result is an approximation of the reserve pool – the number of individuals certified to teach but not presently teaching.

The reserve pool represents potential supply but not actual supply. If teacher salaries were to be tripled, then it would not be surprising if most everyone in the reserve pool started applying for teaching jobs. It is safe to say that teacher salaries won't triple and that not everyone in the reserve pool wants to become a teacher. The realistic question is how many reserve pool members can be counted as actual supply for projection purposes.

A minimal amount of research exists about the likelihood of various members of the reserve pool to seek teaching positions. Broad tendencies of reserve pool members to seek teaching jobs have been defined.

In general, teachers on maternity or health leave have a high probability of returning to teaching. Teachers who recently became victims of a reduction-in-force also have a high probability of seeking a teaching job.

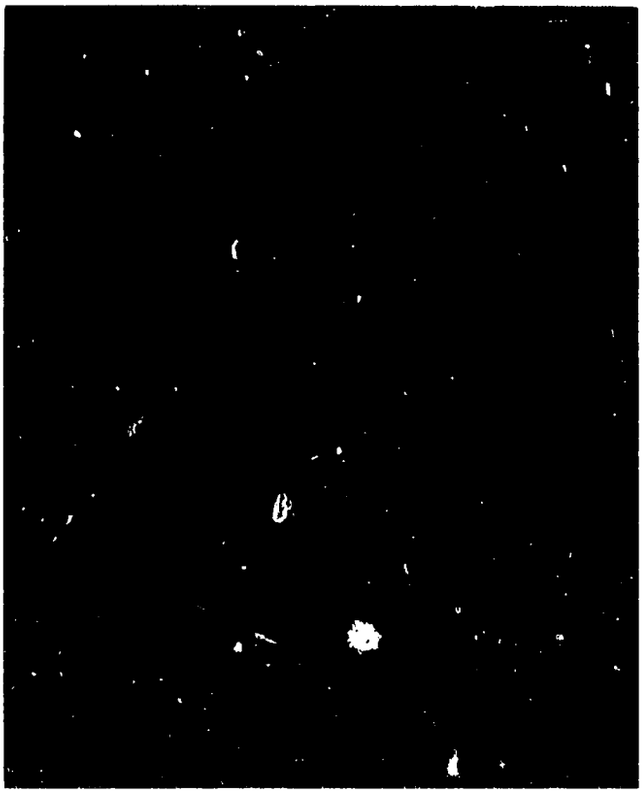
A little farther down the spectrum are teachers newly certified who for one reason or another did not initially obtain teaching jobs. Many of these individuals will eventually seek a teaching position.

Teachers whose credentials are older and who have been out of teaching for several years are less likely to reenter the teaching job market. Finally, people with teaching certificates who have followed a completely different career path for many years have little likelihood of ever seeking a teaching position.

These observations are qualitative while supply and demand analyses are usually quantitative. Most studies that attempt to project supply use the number of reserve pool members hired as teachers in the current year as a substitute for estimating the number of future reserve pool members who will actively seek a teaching position.

Table 4 presents a typical methodology used by analysts to project teacher supply for a state. Again, the assumptions and numbers provided as examples are hypothetical.

TABLE 4.
PROJECTING SUPPLY
ONE YEAR INTO THE FUTURE



All assumptions made when projecting teacher supply are based on the premise that the supply situation in the current year will continue to be the same supply situation in the following year. In the example, 250 students completed teacher education programs in the state during the current year, so it is assumed that 250 students will complete teacher education programs in the coming year. Of the graduating teacher education students, only 25 percent actually pursued teaching jobs. This percentage is used to arrive at the 63 college graduates willing to be teachers a year into the future.

The largest portion of projected supply is found in the reserve pool of certified teachers. The number of individuals who are certified to teach but are not presently teaching is estimated to be about 45,000. Based on what occurred during the most recent hiring period, approximately 2 percent of individuals in the reserve pool—or 900 people—will actively pursue a teaching job.

Fifty teachers who are projected to move into the state from other states and look for teaching jobs (the same number that came from other states during the current year) are included as part of teacher supply. Adding the college graduates prepared and desiring to teach, teachers who move from other states, and individuals from the reserve pool who now want to enter or reenter teaching results in a supply figure of 1,013 for the coming year.

Projecting a Shortage

If the projected demand one year into the future is taken from Table 3, and the projected supply one year into the future is taken from Table 4, the number of additional teachers needed exceeds the number of additional teachers available and the projected shortfall is 471. What does a shortfall mean from a policy standpoint?

Administrators have a number of options to alleviate a projected shortfall. If they do nothing except publicize open positions, some of the need might be fulfilled by qualified individuals from the reserve pool who will be attracted solely by the availability of a job.

Administrators can also raise the number of pupils-to-teacher ratio. In the example, if the pupil-teacher ratio is raised from 23.6 to 25.0, 24 fewer teachers will be needed.

Certificates can be issued on an emergency basis to individuals without the required training. Alternative certification routes may be established to circumvent the prescribed preparation needed to be an effective teacher.

These short-term solutions harm the quality of education that students receive. The two main long-term solutions—raising compensation and improving conditions of work—will provide the most powerful and lasting means for increasing teacher supply.

If an ideal future educational scenario is sketched—lower pupil-teacher ratios, a fully certified teacher in every classroom, and a reserve pool restricted to only those fully qualified to teach—rather than a future scenario based on present conditions, the number of teachers needed increases and the number of qualified teachers available shrinks. A perceived teacher supply/demand balance is really a shortage; a projected shortage increases in magnitude. For this reason it is important to review and critique the assumptions used in any projection study.

"Supply will follow demand" is often heard from some teacher labor market observers, which implies that any shortage will eventually dissipate over the long run. If jobs are available, they say, qualified individuals will soon be ready to fill them.

Such optimism is not completely supported. Supply does not directly follow demand. What supply does react to is the perception of teaching as a rewarding profession, both intrinsically and monetarily. The greater the projected shortage, the more districts must do to make teaching an attractive occupation.

ANALYZING SUPPLY AND DEMAND

Analysis delves deeper into the teacher shortage question than monitoring or projecting. In addition to reporting salient supply and demand statistics, the analysis function examines supply and demand relationships. Trends are observed, and causal relationships between variables are evaluated to help determine policy needs.

Four areas in which the analysis function can prove useful are the following:

- ☐ Sources of teacher supply
- ☐ Attrition for reasons other than retirement
- ☐ Teacher retrenchment
- ☐ Variables that affect teacher supply, most notably compensation and conditions of work.

Analyzing Teacher Supply. Potential teacher supply refers to qualified individuals willing and available to be hired as teachers. The purpose of investigating various components of the sources of teacher supply is to help determine if a problem exists in attracting enough *qualified* teachers to a state or district. It is also important to know whether a problem is becoming worse or better.

Some examples of the data-generating questions to be asked include the following:

I. Who are the new hires?

1. Recent graduates of state credential programs?
2. Credential holders from out of state?
3. Age?
4. Race?
5. Gender?
6. Degree status?
7. Teaching field?
8. Teachers returning after a period of time away from teaching (the so-called reserve pool)?

   a. Why are they returning to teaching?

II. How many individuals trained in one state leave to teach in another state?

1. Why are they leaving?
2. Where are they going?

III. How many individuals trained to be teachers never apply for a teaching job?

   a. Why do they never apply?

IV. What is the trend in the number of state trained college students being trained for the teaching profession?

Analyzing Turnover. Not only is the rate at which teachers leave the occupation important, but also knowing the types of teachers who leave can prove valuable for guiding policy decisions. Research has found that most employees leave their jobs, not because they are attracted to alternative jobs, but because they are unhappy with their current work. Estimating a turnover *rate* can demonstrate the degree to which a problem in a school, district, or state may exist. Estimating turnover *patterns* will put a focus on the types of teachers especially prone to leaving their jobs.

For example, one study found that approximately 50 percent of the teachers with less than five years of experience left the profession (Mark and Anderson, 1985). Such results indicate that with a teaching force made up of both very inexperienced teachers and teachers ready to retire, the demand for future teachers will be especially high. The turnover results also suggest that specific policies should be studied and instituted to moderate turnover among young teachers.

The Metropolitan Life Insurance Company recently commissioned Louis Harris and Associates (1985) to do a national survey of former teachers. The types of information they sought nationally could be used as a model for state and local studies of turnover. The questions they asked centered on the following topics, with some of the results provided in italics:

1. The characteristics of those who leave.
   a. Experience—*46 percent of former teachers have less than 10 years' experience compared with 22 percent of current teachers.*
   b. Gender—*Two-thirds of former teachers are men while 71 percent of current teachers are women.*
   c. Teaching field—*Secondary school teachers are more likely to contemplate leaving than are elementary school teachers.*
2. The positive aspects of their new position—*1. Salary, 2. Professional prestige, 3. Control over one's own work, 4. Equipment one has to work with.*
3. Their reasons for leaving teaching—*Inadequate salary and poor working conditions dominate the list of reasons that former teachers give for leaving.*
4. Any possible plans for reentry into teaching—*Only 17 percent say they are likely to return to teaching in the next five years.*

Teacher Retrenchment. Although many school districts are frantically searching for teachers to fill classrooms, there are pockets of the country where teachers are involuntarily leaving their jobs.

Teacher layoffs are basically due to the following two reasons:

1. A significant drop in enrollments causes a decline in the number of teachers needed at certain grade levels and for specific subject areas.
2. Teachers are needed, but there are not enough funds to pay them. Teachers are dismissed to save money.

Presently, teacher retrenchment involves a combination of the above two reasons. Some geographic areas have declining enrollments because of poor economic conditions. Families move away to search for better economic opportunity.

When teacher retrenchment occurs, it is important to find out why. A depressed local economy casts the problem into the realm of school finance and requires at the least a lobbying effort at the state and federal levels for remedial fiscal measures.

If the real issue is not money but a drop in enrollments, then publicity should be generated about which subjects and grade levels have an oversupply of teachers. Hopefully, this would prevent local teacher education students from training in those particular subjects and grade levels.

A localized economic recession that causes an out-migration of people requires a strategy revolving around information and mobility. Unemployed teachers need to know where there are jobs and whether the benefits of relocating to another area outweigh the costs.

What other districts in the state might need teachers? What other parts of the country are facing a shortage of teachers? Information is crucial for both experienced teachers desiring to relocate and new teacher graduates searching for their first job.

NEA President Futrell suggests that the U.S. Department of Education establish a national clearinghouse to help states locate graduates of teacher preparation programs, particularly those accredited by the National Council for Accreditation of Teacher Education. State education agencies should do the same.

Incentives need to be provided to help make relocation economically feasible. State legislatures should be lobbied to enact interstate reciprocity provisions that increase teacher mobility across geographic regions. Such provisions should include total transfer of pension accruals (portability) and full credit for experience.

Variables That Affect Teacher Supply. Analysis of variables that directly affect the quantity and quality of individuals willing to teach can provide persuasive evidence when advocating for the improved status of teachers. The two most prominent variables that should be examined are compensation and conditions of work. Labor economic theory's basic tenet regarding supply states that as compensation and conditions of work improve in teaching relative to other jobs, more individuals will be willing to provide their services as teachers.

Compensation. It is important to the supply/demand issue to examine trends in the economic status of teachers in a locality relative to various other occupational groups in that locality, including other public sector employees (state and municipal) and high-income professionals such as managers, training specialists, doctors, dentists, lawyers, engineers, and accountants. Economic status ideally should cover beginning salaries, career earnings, and benefits. A study of this nature may provide *one* plausible reason for students not becoming teachers or teachers leaving the profession to work in other occupations.

One possible approximation of the relative economic status of teachers is the incidence of "moonlighting," that is, holding a second job in addition to a regular one. Employees moonlight mostly to meet regular expenses or pay off debts. Other reasons for moonlighting include getting experience in other occupations, building up a business, and a desire to save for the future.

A recent Department of Labor study found that male teachers had the highest incidence of moonlighting of any occupation. Between 16 and 19 percent of all male teachers held a second job. Female teachers also had a comparatively high moonlighting rate at 7 percent. The average rate for all employed workers was 5.4 percent (Stinson, 1986).

A comparatively high percentage of teachers moonlighting indicates a problem with the level of compensation they receive for their primary job of teaching. Analysis of teacher moonlighting can provide evidence that teachers are underpaid and that unless remedies are instituted the attraction and retention of qualified teachers will suffer.

It is also important to examine the economic status of teachers in a locality relative to the economic status of teachers in neighboring localities or states. Teacher mobility among districts because of economic status differences has serious equity implications. Districts that have the highest compensation levels will be able to attract the most highly skilled teachers (ignoring conditions of work for the moment). Districts with relatively low levels of compensation will be especially harmed by periods of teacher shortage.

Conditions of Work. Studies have found that many individuals are attracted to teaching because of the intrinsic rewards—the appeal of being able to work with children, an interest in a subject matter field, and the opportunity to provide a valuable service for society. Intrinsic rewards are also directly influenced by the quantity and quality of supportive material resources, the opportunity for decision making in the school, and the communication process between teacher and administrator.

Better intrinsic rewards will help attract and retain highly skilled teachers. Surveys need to be conducted to provide insight on the extent to which school-level processes and conditions of work hinder the ability of teachers to perform effectively.

Summary. Linda Darling-Hammond (1987) of the RAND Corporation states:

> Though opponents and proponents of teaching reform have justified their views by their beliefs about teacher shortages, the real debate should be conducted on educational grounds. What policies and practices are most likely to strengthen the education received by students in schools?

Her point is well taken; the bottom line is the quality of education received by students. The NEA believes an education that reflects a mastery of a range of knowledge and skills can only be provided by a well-trained, highly qualified staff of instructors. The role of teacher is where the larger debate should be centered.

The teacher shortage question, however, is a crucial part of that larger debate. We know that teachers do matter and should be treated as a valued resource. The profession needs to create an awareness of the skills needed to be an effective teacher and then, as this guidebook suggests, demonstrate that unless constructive policies are implemented there will be a serious shortfall of skilled teachers in many districts. Students will then suffer the consequences.

SOURCES OF DATA

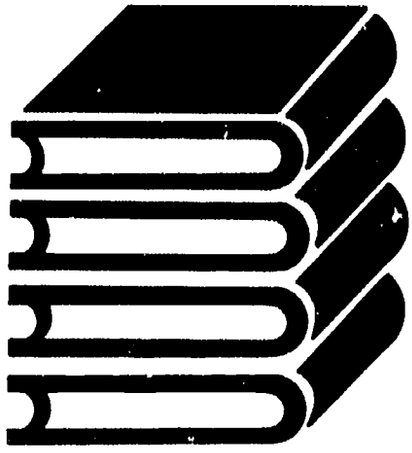
"Our respondent interviews stunningly revealed why good data about teachers are not routinely collected by states and districts. In most states the key actors do not see public education as a major, labor intensive enterprise whose quality would be markedly improved if it were professionally managed. They therefore do not see the need for data about the human resources of that enterprise."

—Sue E. Berryman (1985) RAND Corporation

Approximately 30 percent of the states have the necessary data to develop reasonable teacher supply and demand models. In some states, supply and demand data are spread across a number of agencies. California is a good example of a state with extensive data bases reposited in various agencies (see Table 5).

Much of the data that are available have not been fully utilized. Fortunately, because of increasing fears about teacher shortages, states are starting to put more of an emphasis on gathering and using supply and demand statistics. Table 6 provides a list of state teacher supply and demand reports.

Still, the fact remains that a majority of states have little available in the way of data bases. In addition, all of the studies listed in Table 6 are open to some criticism. One of the most important tasks that state affiliates face is to advocate better teacher supply and demand data and effective utilization of these data to build state models.



Research on the behavioral components of teacher supply and demand, especially supply, needs to be increased substantially. The behavioral aspects are where public policy can influence both the quantity and quality of teacher supply. State and local affiliates can participate in the measurement of key behavioral relationships. Investigating the link between the decision of teachers to stay or leave and the factors related to that choice or the forces underlying teacher migration are two examples.

TABLE 5.
CALIFORNIA AGENCIES
POSSESSING SUPPLY AND DEMAND DATA

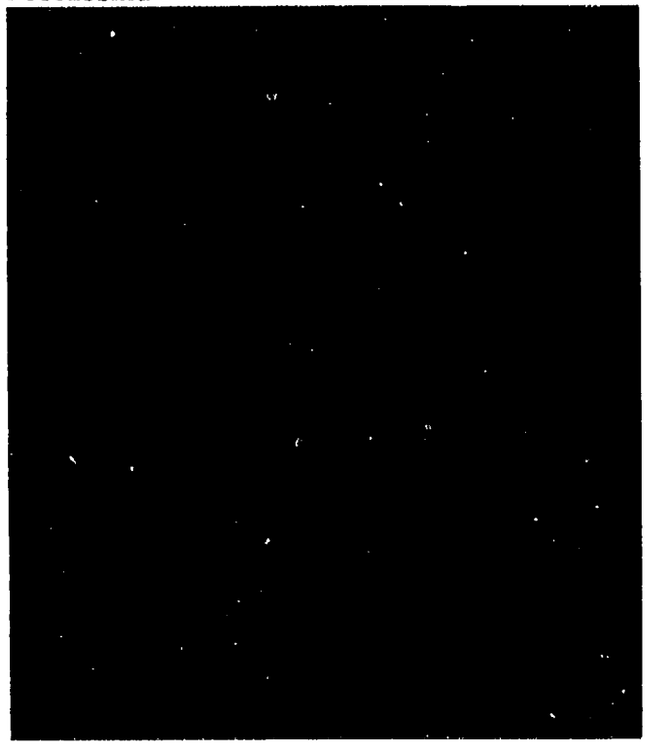


TABLE 6.
SELECTED STATE TEACHER SUPPLY AND DEMAND STUDIES

One of the most complete state studies to date is the Policy Analysis for California Education (PACE) report *Teacher Supply and Demand in California: Is the Reserve Pool a Realistic Source of Supply?* The PACE analysis uses all of the data listed in Table 5 to make projections about teacher supply and demand conditions in future years. The PACE report concludes that if educational reforms are enacted, as much as a 94,000 teacher supply shortfall could occur by 1989-90 and a 167,000 teacher supply shortfall by 1994-95.

NEA AFFILIATE TEACHER SUPPLY AND DEMAND PROJECTS

Summarized below are some examples of teacher supply and demand projects from around the country. These projects have allowed NEA and its affiliates to take an active role in the teacher shortage debate.

DELAWARE STATE EDUCATION ASSOCIATION (DSEA)

FLORIDA TEACHING PROFESSION-NEA (FTP-NEA)

Labor Market Component: Teacher Shortage Projections

Objective: To use state projections of a teacher shortage as a lever for increasing teacher compensation.

Project: The DSEA and the FTP-NEA are both examples of state associations that are using government-generated data and teacher supply/demand projections as evidence in the case for higher teacher salaries. The DSEA has used a Department of Public Instruction analysis for advocacy purposes. The analysis finds that a significant shortage of teachers will occur in the near future unless current policies change. The DSEA has taken the shortage projections as evidence that Delaware teachers are underpaid. Most of the effort has been focused on lobbying the legislature.

The FTP-NEA has taken data from annual Department of Education reports on teacher supply and demand in Florida to publicize the increasing need for teachers. Teacher turnover rates, growth in student enrollments, and teacher graduate trends are all highlighted. The FTP-NEA continually explains the causality between low salaries and the teacher shortage to its members, the legislature, and the taxpayers.

Data Collection Method: Published reports.

NATIONAL EDUCATION ASSOCIATION, RESEARCH DIVISION

Labor Market Component: Conditions of Work

Objectives:

- ☐ To publicize the fact that the most critical obstacles to improving the educational system are the current characteristics of the learning workplace.
- ☐ To show that the current conditions of work negatively affect teacher career commitment.

Project: A study on the conditions and resources of teaching (CART) sought to assess whether teachers can effectively perform given the conditions of work and the resources provided to them to complete their work. The study represents the first national effort to identify empirically the specific problems teachers have with the work conditions of schools.

The survey and analysis focused on the following four themes:

- ☐ Job resource-related problems of teachers
- ☐ Decision making in schools
- ☐ Communication with building-level administrators
- ☐ Correlates of teacher satisfaction and career commitment.

The fourth theme is especially relevant to the teacher supply and demand picture. Results from the survey established that both quantity- and quality-related problems are highly associated with job satisfaction and career commitment. Higher frequencies of resource problems are linked to lower job satisfaction and lower career commitment.

Data Collection Method: Mail survey of a national sample.

FREDERICK COUNTY, VIRGINIA, EDUCATION ASSOCIATION (FCEA)

Labor Market Component: Attrition

Objective: A report was presented to the Frederick County School Board to answer its request for specific information regarding the number of teachers leaving the teaching occupation and their reasons for doing so. FCEA proposed specific and productive recommendations for improving the conditions under which teachers work.

Project: FCEA researched pertinent literature on teacher turnover and then addressed three questions:

- ☐ Who is leaving?
- ☐ Why?
- ☐ What can be done to correct the situation?

A report was written describing a teacher turnover problem in Frederick County. The turnover rate in Frederick County was found to be larger than the rate for either the state of Virginia or the nation. Also, the attrition rate was discovered to have increased over the years 1982-1985. The report concluded that "the lack of such opportunities for and appreciation of teacher excellence is the primary cause of low teacher morale and the attendant decision to leave our school system."

Data Collection Method: Exit interview by telephone.

INDIANA STATE TEACHERS ASSOCIATION (ISTA)

Labor Market Component: Attrition

Objective: To determine the primary causes of teacher attrition in Indiana. The results of the study can then be used to help guide policy decisions aimed at curbing the turnover rate.

Project: The Indiana State Teachers Association is conducting a survey of former teachers to determine the reasons and conditions that contribute to teacher flight in Indiana. The survey is based on the national survey of former teachers done by Louis Harris and Associates (1985) for the Metropolitan Life Insurance Company. ISTA is seeking data on the following topics:

- ☐ Demographics
- ☐ Teaching experience
- ☐ Reasons for leaving teaching
- ☐ Possible enticements for returning to teaching.

Data Collection Method: Mail survey.

IDAHO EDUCATION ASSOCIATION (IEA)

Labor Market Component: Moonlighting

Objective: To draw attention to the fact that because teacher salaries are too low, much of the existing teacher work force has to take additional employment.

Project: The IEA sponsored a study to determine the percentage of Idaho teachers that held second jobs. The study found that over half of the current male teaching force is moonlighting. The results suggest that the high moonlighting rate carries negative implications for teacher productivity, stress, and burnout. Such consequences cause the attraction and retention of qualified teachers to suffer.

Data Collection Method: Mail survey.

WISCONSIN EDUCATION ASSOCIATION COUNCIL (WEAC)

Labor Market Component: New Teacher Graduates

Objective: To provide prospective teachers with salary and employee benefit information for all districts in Wisconsin. WEAC realizes that by publicizing salary and benefit data, the lower paying districts will be at a greater disadvantage when recruiting than they would if this information were not as readily available to prospective teachers. The new compensation "awareness" should incite districts to become more competitive in the hiring of teachers.

Project: WEAC has prepared a packet for students interested in teaching in Wisconsin public schools. The packet has basically two sections. The first section provides general information about the teaching profession and more specific information about NEA, WEAC, and the UniServ function.

The second section provides the following information for each district in the state:

- ☐ Entry-level salary—bachelor's degree
- ☐ Entry-level salary—master's degree
- ☐ Number of salary schedule steps
- ☐ Maximum salary—master's degree
- ☐ Estimate of potential total earnings over a career
- ☐ Employee benefits
- ☐ Tuition reimbursement
- ☐ Curriculum development stipends.

The information will be useful not only to students about to enter the teaching job market but also to students contemplating academic majors and potential careers. Research has shown that once career or job choices have been narrowed to a potential few, the two factors that have the most influence in the selection of a particular career or job are the level of compensation and the availability of employment. WEAC's project aims to shed much light on the former factor.

Data Collection Method: Analysis of district contracts.

MICHIGAN EDUCATION ASSOCIATION (MEA)

Labor Market Component: School Employee Attraction and Retention

Objective: To focus concern on districts' future ability to replace the education employees who will soon take advantage of Michigan's early retirement plan.

Project: MEA researched the intentions of teachers regarding a recently enacted early retirement package. The results showed that 65 percent of those eligible would take advantage of the package, raising the distinct possibility of an unprecedented number of teachers (and administrators) retiring from education over the next five years.

Although recent Michigan enrollment projections imply no additional need for teachers, the high projected retirement rate expresses a need to focus on making teaching an attractive profession. Not only will retiring teachers need to be replaced, but also teachers who will replace the large number of administrators expected to retire.

MEA has conducted focus-group sessions with college students interested in teaching to ascertain ways in which teaching can improve it's image and status. A focus group is much like a group interview, only the interviewer is really a moderator directing conversations down a channel bounded by various discussion topics.

MEA also plans to conduct mail surveys of individuals who were certified but never taught and of teacher and ESP (educational support personnel) members who have left education within the past five years. Responses to the surveys should help determine the needed changes that will attract qualified teachers into Michigan schools.

Data Collection Method: Surveys, focus groups.

REFERENCES

American Association of Colleges for Teacher Education. *Teacher Education Policy in the States: 50 State Survey of Legislative and Administrative Actions.* Washington, D.C.: the Association, 1986.

Berryman, Sue E. "Knowledge About the Nation's Teachers, Or: You've Lost the War If You Can't Find the Battlefield," 1985. (Draft)

Carnegie Forum on Education and the Economy. *A Nation Prepared: Teachers for the 21st Century.* Washington, D.C.: Carnegie, 1986.

Darling-Hammond, Linda. "What Constitutes a 'Real' Shortage of Teachers?" *Education Week*, January 14, 1987.

Feistritzer, C. Emily. *Teacher Crisis: Myth or Reality?* Washington, D.C.: National Center for Education Information, 1986.

Hecker, Daniel. "Teacher's Job Outlook: Is Chicken Little Wrong Again?" *Occupational Outlook Quarterly* (Bureau of Labor Statistics) Winter 1986.

Louis Harris and Associates. *The Metropolitan Life Survey of Former Teachers in America.* New York: Harris, 1985.

Mark, Jonathan, and Anderson, Barry. "Teacher Survival Rates in St. Louis." *American Educational Research Journal*, Fall 1985.

National Center for Education Statistics, *The Condition of Education.* Washington, D.C.: U.S. Department of Education, 1985.

National Education Association. *Status of the American Public School Teacher, 1985-86.* Washington, D.C.: the Association, 1987.

National Research Council. *Toward Understanding Teacher Supply and Demand.* Washington, D.C.: National Academy Press, 1987.

Robinson, Virginia. "Out-of-Field Teaching: Barrier to Professionalism." *American Educator*, Winter 1985.

Rodman, Blake. "Teaching's 'Endangered Species.' " *Education Week*, November 20, 1985.

Roth, Robert "Emergency Certificates, Misassignment of Teachers, and Other 'Dirty Little Secrets.' " *Phi Delta Kappan*, June 1986.

Sedlak, Michael, and Schlossman, Steven. *Who Will Teach? Historical Perspectives on the Changing Appeal of Teaching as a Profession.* Santa Monica, Calif.: RAND Corp., 1986.

Stinson, John F. Jr. "Moonlighting By Women Jumped to Record Highs." *Monthly Labor Review*, November 1986.

U. S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States 1987.* Washington, D.C.: Government Printing Office, 1987.

Watts, Gary D. "And Let the Air Out of the Volleyballs." *Phi Delta Kappan*, June 1986.

Notes

* The terms certificate, license, and credential and variants thereof are used interchangeably through this report. Current NEA policy distinguishes between the certification and licensure processes, as follows:

Certification: The process by which a nongovernmental agency or association grants professional recognition to an individual who has met certain predetermined qualifications specified by that agency or association.

Licensure: The process by which an agency of state government grants permission to persons meeting predetermined state qualifications to practice the education profession.

National Education Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20036