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A STUDY OF TEACHER SUPPLY AND DEMAND IN OKLAHOMA

A DISSERTATION  
SUBMITTED TO THE GRADUATE FACULTY  
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BY  
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Norman, Oklahoma

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A STUDY OF TEACHER SUPPLY AND DEMAND IN OKLAHOMA

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# A STUDY OF TEACHER SUPPLY AND DEMAND IN OKLAHOMA

## CHAPTER I

### INTRODUCTION

According to recent census estimates, Oklahoma's population comprises 1.25 per cent of the population of the United States. Oklahoma's public schools currently employ 1.25 per cent of the public school teachers in the nation.<sup>1</sup> Yet, Oklahoma's colleges and universities confer approximately 2.5 per cent of the teacher education degrees annually conferred by the nation's institutions of higher learning.<sup>2</sup> Thus, Oklahoma is turning out elementary and secondary teachers at twice the rate of the nation as a whole, while employing public school teachers at the same rate as the nation as a whole. This situation has made it possible for Oklahoma to raise the educational standards of its elementary and secondary teacher corps to the highest rank in the nation, and to provide teaching talent for export as well.

Thus far, Oklahoma has been able to place its surplus graduates in the national market, at which level there has been a continuing shortage of qualified teachers since the early 1950's. Now there are signs that the days of critical shortage are gone, and it is prob-

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<sup>1</sup>National Education Association, Research Division, Rankings of the States, 1967, Tables 1 and 28.

<sup>2</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Higher Education: Earned Degrees Conferred: 1966-67, Part A - Summary Data, Table 6.

able that there will be a national surplus in most fields by the early 1970's. Already there is a near-surfeit in secondary education, and the gap at the elementary school level is rapidly being closed--even though this contention is denied by much of the teacher education establishment.

Projections now indicate that there will actually be 2.5 to 3 million fewer elementary school students in the United States a decade from now than there are today, whereas the number of elementary school teachers produced by the nation's colleges and universities is expected to rise by approximately 70 per cent during the next decade.<sup>3</sup> These two factors in combination--a decrease in students and a 70 per cent increase in potential teachers--should bring equilibrium to the supply and demand picture in elementary education by the time that the high school graduates of 1966-67 finish their baccalaureate programs. A continued surplus in most fields of secondary education can also be expected to prevail.

#### Need for a State-Wide Study

It will be the major thesis of this paper that within the next two or three years, the shortages which have existed in teacher education for the past decade and-a-half will have been erased, and that serious overproduction will then be noted. The first wave of the "war babies," those born in 1947, began graduating from the colleges and

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<sup>3</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, Tables 2, 3, and 18.

universities in the spring of 1968, and a series of graduating classes containing even larger numbers will follow for the next ten years. The 1968 college graduating class, for example, contained 7.5 per cent more bachelor's degree students than the 1967 class; and the 1969 class is expected to show an increase of 15 per cent or more over the 1968 class. Since the "war babies" have broken records at every level and in every endeavor in which they have been involved, there is little reason to believe that they will not also go into teaching in record numbers.

The number of degrees to be conferred by Oklahoma colleges and universities will skyrocket over the next decade; also, the number of elementary and secondary pupils to be enrolled by Oklahoma's public schools is expected to decline at a rate greater than the national average. Projections made by the Finance Division of the Oklahoma State Department of Education (see Figure 1) show that elementary school enrollments in the public sector will decline from approximately 415,000 in 1968 to about 340,000 in 1978, a decrease of 18 per cent, which is twice the percentage decrease envisioned nationally for the same period by the United States Office of Education.<sup>4</sup>

Oklahoma will be affected by a saturation of the market in teacher education to an extent far greater than the average state, since about one-half of the graduates from the state's colleges and universities currently plan to become teachers at some level, with the overwhelming majority of these planning to teach at the elementary

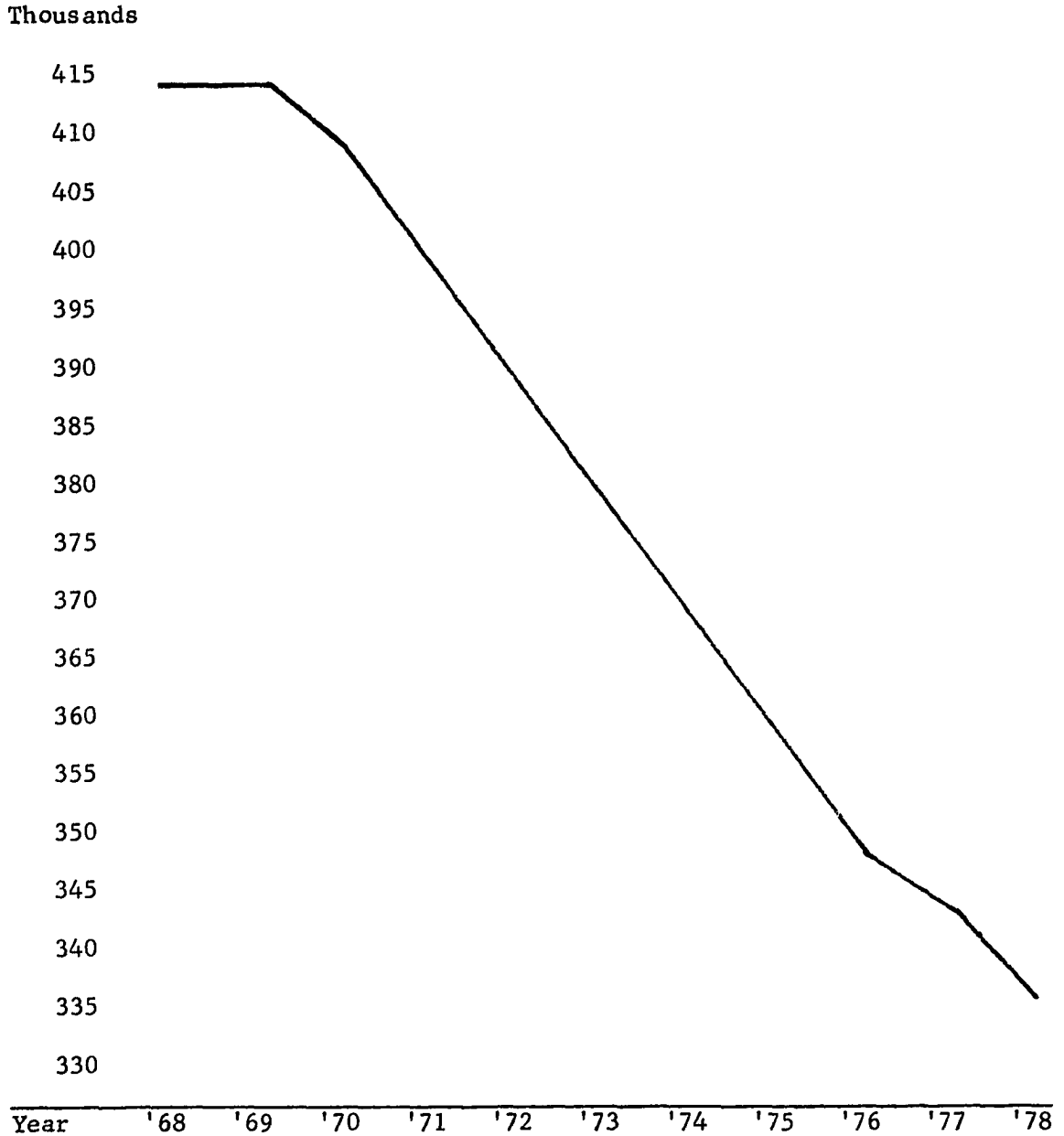
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<sup>4</sup>Ibid., Table 3.



FIGURE 1

PROJECTED ENROLLMENT IN OKLAHOMA PUBLIC  
ELEMENTARY SCHOOLS, 1968 THROUGH 1978



Source: Finance Division, Oklahoma State Department of Education. Projections based on recorded births since 1952. From 1954 to 1962 the number of recorded births represent 90% of the first grade enrollment six years later.

and secondary levels. A comparison of degrees conferred by Oklahoma institutions with those in the nation reveals that Oklahoma students major in teacher education at a rate more than 50 per cent greater than the national average. Table 1 on page 6 indicates that the percentage of degrees conferred at the bachelor's and first professional level in teacher education nationally in 1966-67 was only 20.3 per cent, whereas the figure for Oklahoma was 31.2 per cent, or 54 per cent greater.

When it is considered that those who major in teacher education comprise only about two-thirds of those who are prepared to teach, both nationally and at the state level, the importance of teacher education to Oklahoma is made abundantly clear. For Oklahoma, this means that about one-half of its college graduates at the baccalaureate level are planning to become teachers. It is problematic whether a state can afford to invest one-half of its best-trained human capital in teaching, even though the profession of teaching is an ancient and honorable one. It is even more problematic whether a state or an institution of higher learning should continue to encourage its young people to train for an occupation or profession in which the opportunity for employment, and therefore, fulfillment, is negligible.

James B. Conant, in The Education of American Teachers, questioned the validity of national statistics with regard to the production and utilization of teacher education graduates, stating that "I have become more and more skeptical of overall figures that purport

TABLE 1

BACHELOR'S AND FIRST PROFESSIONAL DEGREES CONFERRED BY OKLAHOMA  
COLLEGES AND UNIVERSITIES, 1966-67, AS COMPARED WITH  
DEGREES CONFERRED NATIONALLY IN 1966-67

Division of Study	Oklahoma <sup>a</sup>		Aggregate U. S. <sup>b</sup>	
	No.	%	No.	%
Agriculture	142	1.5	6,258	1.0
Architecture	59	0.6	2,867	0.5
Biological Science	361	3.9	28,993	4.9
Business and Commerce	1,441	15.5	69,687	11.7
EDUCATION	2,894	31.2	120,879	20.3
Engineering	480	5.2	36,188	6.1
English and Journalism	507	5.5	45,949	7.7
Fine and Applied Arts	323	3.5	21,569	3.6
Foreign Language and Literature	100	1.1	17,025	2.9
Forestry	30	0.3	1,631	0.3
Geography	25	0.3	2,163	0.4
Health Professions	425	4.6	29,371	4.9
Home Economics	183	2.0	6,335	1.1
Law	251	2.7	15,339	2.6
Library Science	17	0.2	701	0.1
Mathematical Subjects	307	3.3	21,308	3.6
Military Science	23	0.2	1,931	0.3
Philosophy	43	0.4	5,420	0.9
Physical Sciences	253	2.7	17,794	3.0
Psychology	202	2.2	19,496	3.3
Religion	111	1.2	8,168	1.4
Social Sciences	962	10.4	104,771	17.6
Trade and Industrial Training	40	0.4	2,741	0.4
Other Fields	98	1.1	8,278	1.4
TOTAL	9,277	100.0	594,862	100.0

<sup>a</sup>Adapted from data in the files of the Oklahoma State Regents for Higher Education.

<sup>b</sup>USOE, Higher Education: Earned Degrees Conferred: Part B - Institutional Data: 1966-67, Table 6.

to give the annual supply and demand figures for the entire United States."<sup>5</sup> Dr. Conant suggested as an alternative that each state do its own assessment of manpower needs in the teaching profession. The current study proposes to do for Oklahoma what Dr. Conant and others have suggested, and will be directed toward the creation, compilation, and analysis of data which are not now available from other sources, or which have not until now been pulled together into one publication.

#### Teacher Education Policy in Oklahoma

There is at present no clear-cut policy in Oklahoma concerning the strategy which might be adopted in the event of an acknowledged surplus of teachers nationally. Provided that such a surplus did exist, certain policy questions would be sure to arise, and logic would dictate that these questions be raised before, and not after, the fact. The basic questions would appear to be these: Should supply and demand in teacher education be carefully monitored, or should the free market be allowed to operate insofar as practicable? Should institutions of higher learning, and institutions in Oklahoma particularly, limit access to those teacher education programs for which there is little demand, and strongly encourage students to enter those fields for which the demand is greater? And if it is not within the realm of the university's responsibility to monitor the relationship between supply and demand, is this function the responsibility of some

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<sup>5</sup>James Bryant Conant, The Education of American Teachers (New York: McGraw-Hill Book Company, Inc., 1963), p. 229.

other public agency or institution? Or should students be allowed to pursue any occupational and professional ambitions that they might have, regardless of supply and demand conditions? Or should the teaching profession itself regulate the doorway to the inner sanctum? These are policy questions which need to be asked and answered for teacher education in Oklahoma at this point in history.

If it is ultimately determined that the operation of the free market should determine teacher supply and demand, then there would logically be no official concern over the surpluses and shortages which periodically manifest themselves. Provided that all parties in the transaction have faith in the efficacy of the market, then neither the state, institutions of higher learning, nor the profession itself need be troubled with any aspect of the problem save that of abolishing those artificial barriers which might impede the operation of a free market.

If, on the other hand, it is determined that active steps should be taken to bring the manpower supply into conformity with the demand, it would be logical to choose the most rational means for encouraging an increase in the number of teachers in the face of a shortage, and for discouraging production or encouraging better utilization in the face of a surplus.

Although it would be possible to treat theoretically the problem of teacher manpower apart from an actual study of supply and demand in a given state, it is believed that such a study will not only outline the dimensions and possible seriousness of the problem, but also will furnish those in positions of leadership with useful data for

counseling students, developing educational programs, and utilizing professional personnel in teacher education to the fullest extent possible.

#### Objectives of the Study

The general purpose of this study of teacher supply and demand is to suggest possible implications for public policy concerning the production and utilization of teacher education manpower for the elementary and secondary schools of Oklahoma.

In connection with the accomplishment of this general purpose, several intermediate objectives will be pursued, as exemplified by the listing below:

1. To provide an overview of teacher education in Oklahoma, including a review of the current legal and administrative structure for the production and utilization of elementary and secondary teachers for the public schools.
2. To ascertain the potential demand for teachers needed to staff the public elementary and secondary schools in Oklahoma during the next ten years.
3. To determine the potential supply of teachers available to staff the public elementary and secondary schools in Oklahoma during the next ten years.
4. To determine the incidence and possible causes for the departure of good teachers from the profession, and to suggest ways of retaining these teachers, or of attracting them back into the active ranks.
5. To suggest ways in which the collection of more or better refined teacher supply and demand data might facilitate the administration of teacher education policy and programs in Oklahoma.
6. To arrive at recommendations with regard to the need for additional research in the areas of teacher production and utilization in Oklahoma.

Procedures

The following procedures will be employed to carry out this study of teacher supply and demand in Oklahoma:

1. As a background for examining the teacher supply and demand situation in Oklahoma, the recent history of the national teacher education manpower situation will be reviewed. Following that, public policy in Oklahoma with regard to teacher education will be examined, together with a description of the structure within which public policy is determined.
2. In order that the potential demand for teachers to staff Oklahoma elementary and secondary schools for the next decade might be plotted, the following methods and procedures will be employed:
  - a: Projections of pupils for each grade level from kindergarten through high-school graduation will be made from now through 1978-79, based on birth statistics from the Oklahoma State Health Department, and current enrollment statistics from the Oklahoma State Department of Education. The "Cohort-Survival" method of projection will be utilized to "survive" students from one grade level to the next.
  - b: After the number of pupils to be enrolled in the public schools for each year through 1978-79 has been projected, the number of elementary and secondary teachers needed to teach these pupils will be calculated, based on projected pupil-teacher ratios.
  - c: An analysis of teacher turnover in Oklahoma public schools will be made, in order to ascertain how many elementary and secondary teachers currently leave their positions each year through retirement, death, moving to another district within Oklahoma, and the like. This analysis will serve as the basis for projecting the number of new teachers which will need to come from the teacher reserve, and the number of beginning

teachers which will need to be produced by the state's colleges and universities.

3. In order that the potential supply of teachers for Oklahoma's elementary and secondary schools might be calculated for the years between now and 1978-79, the following procedures will be employed:
  - a: Projections of college enrollments will be made for each year between now and 1978-79, together with the number of prospective graduates in teacher education at both elementary and secondary levels. Here again, the "Cohort-Survival" method of projecting enrollments will be utilized.
  - b: The prospective input of teachers from the teacher reserve will be plotted for each year between now and 1978-79, based on estimated input of reservists as calculated for the past three years. These calculations will be based on statistics of the Oklahoma State Department of Education.
4. Upon completion of the studies and analyses cited above, the projected supply of teachers will be plotted against the anticipated demand between now and 1978-79. A series of conclusions will then be drawn, from which certain recommendations about policy in teacher production and utilization will follow.

#### Assumptions

The following assumptions, though not exhaustive of those which underlie this study, constitute the principal foundation on which the study is constructed:

1. A society is best served when its manpower demands are in reasonable conformity with its manpower supply. Substantial deviation from a state of equilibrium in manpower supply and demand is usually harmful to individuals, to the society, or to both.
2. A rational society will seek to bring about equilibrium in manpower supply and demand through rational means, rather than trust in the operation of so-called "economic laws" or chance. The power of the state is



therefore legitimately brought into play as an instrument in carrying out the society's manpower policies.

3. Colleges and universities, as social institutions created for social purposes, should not stand aloof from the manpower needs of society, but should be responsive in helping to meet society's legitimate demands for trained manpower.
4. Programs of education in colleges and universities can be justified to the extent (a) that they prepare students in those fields and for those professions which students themselves have chosen and in which they might be expected to find suitable and rewarding fulfillment; and (b) that there is a legitimate societal need for trained manpower of the type that is being produced.

In addition to the general assumptions set forth above, several specific assumptions related to teacher education are set out below.

5. The number of births in Oklahoma will increase slowly over the next five years, increasing by approximately 500 each year from 1969 through 1974.
6. There will be publicly financed kindergartens in operation in all Oklahoma school districts by the fall of 1971.
7. The trends now in evidence with respect to the percentage of college students entering teacher education will continue into the foreseeable future, provided that requirements for entrance to the profession remain essentially as they are now.
8. Pupil-teacher ratios in Oklahoma elementary and secondary public schools will continue to follow the patterns established over the past five years.
9. Teacher turnover in Oklahoma will continue to follow the pattern established over the years 1965, 1966, and 1967.

The final two items listed below might more properly be classified as presuppositions rather than assumptions. Regardless of classification, their importance to the study cannot be overemphasized:

10. Unless there is a marked upturn in demand for elementary and secondary school teachers as a result of new Federal or state programs, a substantial surplus of teachers will develop nationally during the 1970's.
11. There is currently a surplus of elementary and secondary school teachers in Oklahoma, which surplus will intensify over the next three years as the national manpower market in teacher education reaches a state of equilibrium.

#### Delimitation of the Study

Research concerning teacher supply and demand can be categorized by two types: that dealing with the overall manpower problem; and that which treats a particular subject-matter field or discipline. This research will be confined to the overall manpower problem in the elementary and secondary levels of public education. It will also be concerned primarily with Oklahoma, and therefore may not be representative of the national situation. Even though one of the assumptions on which this study is based should prove to be invalid (that the national supply in teacher education is increasing faster than the demand), the significance of this research for Oklahoma is not thereby diminished. It will still be of importance to ascertain the extent to which Oklahoma differs from other states in the production and utilization of teacher education manpower.

Although this study is devoted almost exclusively to quantitative, rather than qualitative aspects of teacher production and utilization, this is not to suggest that quantity is of greater importance than quality. Rather, it is believed that the quantitative foundation which is being laid in this study can serve as the begin-

ning point for a later study devoted primarily to qualitative aspects of the problem.

A limiting, as well as delimiting factor currently encountered in the study of teacher manpower is the fact that most of the teacher manpower data are gross data. That is, it is sometimes difficult to break down the statistics gathered by state departments of education and other agencies into sub-categories for detailed analysis. It is much more difficult, for example, to obtain information about first-grade teachers than about elementary teachers as a group. Likewise, it is sometimes impossible to classify secondary teachers by their subject-matter specialities in order to ascertain where the areas of greatest shortage and surplus exist. Even though the problem posed by the lack of precise data serves to inhibit this study, it is hoped that the recommendations coming out of the conclusions chapter will help to improve the kinds of data to be gathered by institutions and agencies in the future.

#### Review of Related Research

It is generally agreed that there has not yet been a definitive study of teacher supply and demand in American education. Don Davies, Associate United States Commissioner of Education in charge of the new Bureau of Educational Personnel Development, said in September of 1968 that no one has

. . . ever taken on a comprehensive manpower study in American education. The NEA does supply-and-demand studies which are very useful, and there are a few higher education studies, but this is the first time

that the education manpower problem has been attacked as a whole.<sup>6</sup>

Earlier, and in the same vein, James B. Conant had said:

I have become more and more skeptical of overall figures that purport to give annual supply and demand figures for the entire United States . . . . Whatever the total supply of teachers may be, however, it is clear that they will not be distributed equitably from state to state, and that there will be differences in the number of pupils assigned to each teacher in different states.<sup>7</sup>

#### Publications of the National Education Association

In spite of the fact that most previous studies of teacher supply and demand have been lacking in one or more dimensions, this does not mean that no good manpower research has been accomplished. A number of valuable studies have in fact been carried out, most of them by the National Education Association. The Research Division of that organization, headed for many years by Sam M. Lambert (now Executive Director of the NEA), began publishing annual statistics on teacher manpower in 1948. In a document issued annually entitled Teacher Supply and Demand in Public Schools, the results of a special survey of state departments of education in all 50 states are reported. Among items included in that publication are the number of persons reported to have completed teacher education programs in the previous

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<sup>6</sup>"EPDA From the Top: An Interview with Don Davies," Phi Delta Kappan, Vol. XL, September, 1968, page 37.

<sup>7</sup>James Bryant Conant, "Supply and Demand of Teachers," The Education of American Teachers (New York: McGraw-Hill Book Company, Inc., 1963), pp. 229-30.

year; the estimated demand for new teachers by level and subject-matter field for the United States; and the results of special surveys and studies carried out on a periodic basis.<sup>8</sup>

It would be difficult to overestimate the importance and influence of the National Education Association's teacher supply and demand data. In the absence of systematic research from other quarters, that organization's data--along with its assumptions and conclusions--have been accepted almost without question by most organizations, agencies, and institutions of the nation, including the United States Office of Education and the Congress.

A critique of Teacher Supply and Demand in Public Schools reveals a considerable number of strengths, including the following: (1) The publication is compiled annually, the only annual survey of teacher manpower conducted by any agency; (2) the data are reasonably comparable from year-to-year, except that the statistical tables do not always carry comparable headings from one report to the next; and (3) the reports are relatively comprehensive, both by level and by subject-matter discipline.

The chief weaknesses of the report would appear to be:

(1) There is no up-to-date estimate of teacher turnover upon which to base calculations of teacher demand; and (2) there would appear to be a tendency on the part of the Research Division to overemphasize the

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<sup>8</sup>For the most recent example of this publication, see Teacher Supply and Demand in Public Schools, 1967: Research Report 1967-R18, Research Division - National Education Association, 88 pp.

shortages and to minimize the surpluses in the various levels and fields. For example, the teacher surpluses are not subtracted from the shortages to arrive at a true balance. In fact, the surpluses are not taken into account at all, whereas the shortages in the various fields are accumulated and reported in total. By way of example, a recent report on Teacher Supply and Demand in Public Schools pointed up a national shortage of secondary teachers in the range from 26,500 to 136,000, which figures did not take into account the fields in which surpluses were acknowledged to exist.<sup>9</sup> That particular method of reporting assures that there will always be a teacher shortage, so long as there is a shortage in one particular level or subject-matter field, even though there may be thousands of trained teachers unemployed.

Other publications of the National Education Association which have implications for teacher supply and demand include documents entitled Rankings of the States, which contains statistics on public school enrollments, pupil-teacher ratios, and the like; the NEA Research Bulletin, a quarterly statistical bulletin containing current and projected estimates of teachers, pupils, etc.; and a 1968 document entitled Financial Status of the Public Schools, which reports profiles of classroom teachers, as well as statistics on teacher surpluses and shortages.

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<sup>9</sup>Ibid., p. 5.

## Publications of the Federal Government

Until very recently, the Federal government did not assume major responsibility for monitoring the supply and demand of teachers nationally. Rather, most of the Federal agencies and departments were content to use the data--together with the assumptions and conclusions--of the National Education Association in arriving at public policy decisions with regard to teacher supply and demand.

This does not mean, however, that a number of meaningful studies of teacher manpower have not been produced or sponsored by agencies at the Federal level. One such study, and one which needs to be repeated on a regular basis, is a landmark publication by Frank Lindenfeld on teacher turnover.<sup>10</sup> That study surveyed the classroom teachers in the public elementary and secondary schools of the nation to ascertain the rate of teacher turnover resulting from teacher mobility, retirement, death, and other reasons. Both the National Education Association and the Office of Education still rely heavily upon Lindenfeld's study for their estimates of turnover, even though the data are now ten years old, and subject to criticism.

Of special importance to the field of teacher supply and demand are other publications such as the Office of Education's latest study of Projections of Educational Statistics.<sup>11</sup> That series contains his-

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<sup>10</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Teacher Turnover in Public Elementary and Secondary Schools, 1959-60, 28 pp.

<sup>11</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, 122 pp.

torical as well as projected data on numbers of pupils and teachers for past and future decades, together with projections of degrees conferred at colleges and universities.

A recently published report by the Educational Resources Information Center (ERIC) on educational manpower is entitled Manpower Research: Inventory for Fiscal Years 1966 and 1967.<sup>12</sup> The ERIC materials will undoubtedly prove to be very helpful in the field of supply and demand research in the years ahead, if only to reveal that there is a paucity of research currently under way in this area of educational manpower.<sup>13</sup>

In summary, it would probably not be unfair to report that the Federal government's role in monitoring teacher supply and demand has not been substantial, although it is possible to piece together a fairly consistent picture of teacher manpower by combining all of the material from the Office of Education, the Bureau of Labor, and the Educational Resources Information Center. Even so, the basic data base at the national level is not complete, and needs to be reinforced with statistics on teacher turnover, current manpower data by subject field and level, and with projections of output by level and field.

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<sup>12</sup>U. S. Government Printing Office, Superintendent of Documents, Catalog No. FS5.2.2 12036, 1968, 261 pp.

<sup>13</sup>Other useful publications of the United States Office of Education include: Digest of Educational Statistics: 1968, OE-10024-68, 136 pp.; Earned Degrees Conferred: 1966-67 Part A - Summary Data; and Part B - Institutional Data; also see A Symposium on Educational Manpower: Concepts, Strategies, and Priorities for Research in Educational Manpower, 1967, 68 pp.



## Books and Articles on Supply and Demand

A work which had a significant impact on American education in the early 1960's was The Education of American Teachers, by James B. Conant. That publication, previously cited in this paper, contains an appendix section devoted wholly to supply and demand, as well as helpful suggestions within the book itself on needed research in the field of teacher manpower. A recent book replete with public policy suggestions on teacher supply and demand is Education and Public Policy, edited by Seymour E. Harris and Alan Levensohn. A chapter in that work is devoted exclusively to the training of manpower in relation to needs, and a second chapter dealing with educational planning devotes considerable emphasis to manpower.<sup>14</sup>

Another book which contains a good recent review of the manpower situation in elementary and secondary education is entitled Breakthrough in Teacher Education, by James C. Stone.<sup>15</sup> The initial chapter of that work places teacher education within the total setting of American higher education, recounts the story of teacher shortages beginning in the early 1950's, and treats the current supply and demand problem in some detail.<sup>16</sup>

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<sup>14</sup>Seymour E. Harris and others, Education and Public Policy, (Berkeley: McCutchan Publishing Corporation, 1965), 347 pp.

<sup>15</sup>James C. Stone, Breakthrough in Teacher Education, (San Francisco: Jossey-Bass, Inc., 1968), 206 pp.

<sup>16</sup>Other related and relevant works include the following: David Riesman, Constraint and Variety in American Education, Garden City, N. Y., Doubleday, 1958); Arthur Pearl and Frank Riessman, New Careers for the Poor, (New York, Freepress, 1965); Bernard H. McKenna,

Among the pertinent articles on supply and demand is a paper presented by J. R. Rackley and Norman A. Miller before The Seattle Conference on "The Role of the State Department of Education in Teacher Education." The burden of this paper is the necessity for state departments of education to collect, analyze, and disseminate information to educators, students, and parents of prospective teachers, in order that young people would be enabled to avoid those areas of congestion and concentrate on those areas of undersupply in teacher education.<sup>17</sup>

W. W. Charters pointed out over a decade ago that the problems which the public schools face is not a shortage of teachers, but a shortage of "teaching." He reported on a study which showed that of a given group of teacher-education graduates, ten per cent did forty per cent of the man-years of teaching. Of the original sample of one thousand graduates, in the ten-year period following their graduation, four hundred did no teaching, one hundred fifty taught only one year, and one hundred forty-four taught only two years.<sup>18</sup> As Charters

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Staffing the Schools: How Many Professionals Are Needed? How Should They be Deployed? What Should be Their Characteristics?, (New York, Columbia University Bureau of Publications, 1965). Also, see J. A. Kershaw and R. N. McKean, Teacher Shortages and Salary Schedules, (New York, McGraw-Hill Book Co., Inc., 1962).

<sup>17</sup> J. R. Rackley and Norman A. Miller, "Broad Policy Concerns and Direction for A State Department of Education in Teacher Education," from The Seattle Conference: The Role of the State Department of Education in Teacher Education, Roy A. Edelfelt and Wendell C. Allen, editors, pp. 14-22.

<sup>18</sup> James A. Hopson, "The Sense of Power of Short-Tenure Teachers," unpublished doctoral dissertation, Washington University, 1966, p. 1.

observed, the principal problem was not teacher production, but better utilization of those teachers produced.

Perhaps the most relevant study at the state level dealing with teacher manpower was accomplished in California by the California State Department of Education.<sup>19</sup> That study, conducted by Arthur D. Little and Company, in 1967, indicated that California would continue to experience shortages at the elementary level in the immediate years ahead, but that teachers for secondary education appear to be adequate to meet the demand. Among the conclusions of the study is one dealing with the fact that the undersupply of teachers in California has been given considerably more attention than the fact of oversupply. The California study probably stands alone as an example of concern for teacher manpower at the state level, and is important to the current study both because its concerns and methodology are analogous to that which is being attempted here.

In summary, it can be stated categorically that no definitive study of teacher supply and demand has as yet been accomplished on a national scale, although the United States Office of Education has committed itself to this task as a part of its administration of the Education Professions Development Act. The most important studies in connection with teacher manpower have been provided by the National Education Association, but the conclusions which have been drawn from the data collected by that organization would appear to overstate the

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<sup>19</sup> Arthur D. Little, Inc., Teacher Supply and Demand in California: 1965-1975, 1967, 201 pp.

case for teacher shortages and understate the surpluses which exist in a number of fields, particularly at the secondary level. The Federal government has not operated on a systematic basis with regard to the monitoring of teacher manpower, but has produced several good studies on a periodic basis, among them being the only useful research done thus far in the area of teacher turnover. At the state level, California has produced the only comprehensive study of supply and demand thus far, and that research should be helpful to other states in the design of similar studies relating to teacher manpower.

#### Organization of This Study

The proposed outline for this study of teacher supply and demand in Oklahoma is as follows: Chapter I has been devoted to a statement of the problem and to a review of the related research, as well as to the proposed organization of the report. Chapter II will treat the background of the problem nationally, showing historical enrollments and teacher utilization patterns over the past decade, as well as a projection of overall manpower needs at the national level for the decade ahead. Chapter III will contain a review and analysis of national manpower figures for the latest year available, as compiled by the National Education Association in its annual study on teacher supply and demand.

Chapter IV will present an overview of teacher education in Oklahoma, together with historical data on public school enrollments and teacher productivity. Chapter V will attempt to project the demand for teachers in Oklahoma from the present to the year 1977-78,

and Chapter VI will treat the projected supply of teachers for the same period, as well as the relationship between supply and demand for those years. Chapter VII will summarize the most important aspects of the study, and will attempt to draw policy implications with regard to the production and utilization of elementary and secondary teachers for Oklahoma over the next decade.

Because the dimensions of the teacher education problem are considerably greater in Oklahoma than in the nation at large, the possibility of saturating the teaching market through overproduction weighs more heavily upon Oklahoma than upon most other states. Hence, there is need for better information and better understanding on the part of those responsible for policy and programs of teacher education and utilization, not only at the state and institutional levels, but also at the level of the profession itself. It is hoped that this study of teacher supply and demand in Oklahoma will furnish useful data and provide some degree of insight into the field of teacher manpower.

## CHAPTER II

### BACKGROUND OF THE PROBLEM

For the past decade and-a-half, American elementary and secondary schools have been operating amid the pressures of extremely rapid growth, occasioned for the most part by a dramatic increase in the number of births following World War II, and to a lesser extent by improvements in student retention at the secondary level. In 1940 the number of births in the United States was in the neighborhood of 2.6 million. By 1950, the number had risen to more than 3.6 million, and ultimately reached a high of 4.3 million in 1957. This increase in births began to make its way into the elementary schools in the early 1950's.

#### Student Enrollments in Public Schools

Whereas between 1940 and 1950 public school enrollments actually showed a slight decrease, between 1950 and 1968 the number of pupils in public schools ballooned by 75 per cent, going up from 25 million to 44 million, an average annual increase of 1 million per year for the 18 years.<sup>1</sup>

Table 2 reveals that between 1950 and 1957, enrollment in public elementary schools increased by more than 45 per cent, going from 15.7 million to more than 22.8 million, an absolute increase of

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<sup>1</sup>U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1966, p. 120; and U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, Table 3.

7.2 million in seven years. By way of contrast, secondary enrollments increased negligibly over the same period. By the middle of the 1950's, however, the "war babies" also began to swell the ranks of the high schools. In the decade 1957 to 1967, secondary enrollments in the public schools went from 10 million to 16.5 million, an increase of more than 60 per cent.

TABLE 2

ENROLLMENT IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS OF THE  
UNITED STATES FOR SELECTED YEARS BEGINNING WITH 1940

(In Thousands)

Year	Elementary	Secondary	Total
1940	15,023	10,410	25,433
1950	15,706	9,406	25,112
1957	22,860	10,091	32,951
1958	23,415	10,666	34,081
1959	23,906	11,276	35,182
1960	24,350	11,931	36,281
1961	24,603	12,861	37,464
1962	25,264	13,485	38,749
1963	25,775	14,412	40,187
1964	26,221	15,195	41,416
1965	26,670	15,504	42,174
1966	27,127	15,928	43,055
1967	27,400	16,500	43,900

Sources: For 1940 and 1950 data, U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1966, p. 120. For the years 1957-67, U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, Table 3.

The National Supply of Teachers

The supply of teachers necessary to cope with the enrollment increases of the 1950's was nowhere near adequate, either in terms of

numbers or in adequacy of preparation. The addition of a million new pupils per year during the 1950's called for the addition of 40,000 new teachers annually just to keep up with the growth in students, not counting the teachers needed to replace normal attrition losses. The small number of births during the depression years, coupled with the drop in the number of college graduates during World War II, had lowered the teacher manpower pool to a dangerous level.

The pupil-teacher ratio in public elementary schools was 33-to-1 in 1950, higher than it had been in 1940.<sup>2</sup> Even the small number of teachers available was inadequately prepared. A survey of 39 states by the National Education Association in 1950-51 revealed that less than one-half of the elementary teachers in service held a minimum of a bachelor's degree, which reflected a decrease over a survey conducted two years earlier.<sup>3</sup>

Somehow the nation's schools were able to recruit enough willing--though not always well-prepared--teachers to man the classrooms through the critical years of the 1950's. Fortunately, the colleges and universities were able to harvest two abnormally large crops of bachelor's degree graduates in the years 1950 and 1951; otherwise, the situation might have been disastrous. For example, in 1950 there was a total of 433,734 bachelor's and first professional degrees granted

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<sup>2</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Digest of Educational Statistics, 1966, Table 7; and Statistical Abstract of the United States, 1966, p. 122.

<sup>3</sup>Teacher Supply and Demand in Public Schools, 1966 (Washington, D. C.: National Education Association, 1966), Table 26.



in the United States, as compared with a pre-war total of 186,500 in the year 1940.<sup>4</sup> Not until thirteen years later, in 1962-63, were the colleges to turn out so many bachelor's degrees in a single year.

That there has been progress in bringing the supply into conformity with the demand in teacher education can be seen in the gross statistics. Even though enrollments in public elementary and secondary schools rose by 33 per cent between 1957 and 1967, the number of elementary and secondary school teachers increased by more than 46 per cent.<sup>5</sup> At the elementary level, where the increase in students amounted to just 20 per cent between 1957 and 1967, the number of classroom teachers jumped by a healthy 30 per cent. This had the effect of reducing the pupil-teacher ratio at the elementary school level from 29.1-to-1 in 1957 to 26.7-to-1 in 1967.<sup>6</sup> During the same period, the percentage of elementary teachers holding a minimum of a bachelor's degree was being raised from 70 per cent to 92 per cent of the total teachers in service.<sup>7</sup>

The shortages at the secondary school level have not been as critical through the years as at the elementary level, for two reasons. First, the colleges had very little advance warning--about five or six

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<sup>4</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Earned Degrees Conferred by Higher Educational Institutions: 1956-57; and Earned Degrees Conferred: 1965-66.

<sup>5</sup>Projections of Educational Statistics to 1976-77, Tables 3 and 23.

<sup>6</sup>Ibid., Table 24.

<sup>7</sup>NEA, Teacher Supply and Demand in Public Schools: 1967, Table 25.

years--to begin preparing elementary school teachers following the escalation in the national birth rate which occurred in 1946 and 1947. Whereas there was little time to recruit and train a sufficient number of teachers for the elementary schools in 1952 and 1953, the secondary schools had a time lag of approximately a decade in which to recruit and train its teachers before the enrollment bulge moved from the lower levels to the upper.

TABLE 3

CLASSROOM TEACHERS IN REGULAR PUBLIC ELEMENTARY AND SECONDARY DAY SCHOOLS OF THE UNITED STATES, FALL 1957 THROUGH 1967

(In Thousands)

Year	Elementary	Secondary	Total
1957	786	473	1,259
1958	815	491	1,306
1959	832	524	1,356
1960	858	550	1,408
1961	869	592	1,461
1962	886	621	1,507
1963	908	669	1,577
1964	940	708	1,648
1965	965	746	1,711
1966	1,005	783	1,788
1967	1,040	815	1,855

Sources: For 1957 through 1966, U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, Table 23. For 1967, U. S. Department of Health, Education, and Welfare, Digest of Educational Statistics: 1968 Edition, p. 38.

Secondly, even though the greatest opportunities for employment exist at the elementary level (the ratio of elementary school teachers to secondary teachers is on the order of 56:44), the number

of prospective teachers in training is always heavily weighted on the side of the secondary school (about 60:40). It thus appears that the secondary-school teacher still enjoys a prestige advantage over his elementary-school colleague.<sup>8</sup>

TABLE 4

PUPIL-TEACHER RATIOS IN REGULAR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS OF THE UNITED STATES, FALL TERMS 1957-67

Year	Elementary	Secondary
1957	29.1	21.3
1958	28.7	21.7
1959	28.7	21.5
1960	28.4	21.7
1961	28.3	21.7
1962	28.5	21.7
1963	28.4	21.5
1964	27.9	21.4
1965	27.6	20.8
1966	27.0	20.3
1967	26.7	20.2

Source: U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77, Table 24.

At present there are still scattered shortages of teachers in selected areas of secondary education, but the surpluses now far outweigh the shortages, which are minor by comparison.<sup>9</sup> It is now abun-

<sup>8</sup>NEA, Teacher Supply and Demand in Public Schools: 1966, p. 45.

<sup>9</sup>The most recent NEA study on supply and demand showed that in 1967, the number of college graduates who majored in secondary education exceeded the number of "new" secondary school teachers employed for the following year. This is even more significant than it might appear on the surface, since the "new" teachers employed consisted of

dantly clear that the teacher shortage in secondary education has ended. Even at the elementary school level, where shortages are believed to exist--and did exist until very recently--it is relatively plain that the shortages may soon be replaced by surpluses.

It has been pointed out previously that even during the decade 1957-1967, when severe shortages were alleged to have existed in elementary education, the profession was still able to pare its pupil-teacher ratio from 29.1 to a figure of 26.7, while at the same time the percentage of elementary school teachers with less than a bachelor's degree was being reduced from 30 per cent to 8 per cent of the teaching force. These two factors could not have occurred simultaneously in the face of a critical shortage. Instead, the public schools were able to exercise a modest degree of selectivity, at least to the extent that substantial progress was made toward the twin goals of cutting the pupil-teacher ratio to 25-to-1, and of eliminating those still teaching at the elementary level with less than a bachelor's degree.

#### Looking Toward the Future

When statistics for the decade 1957-67 are compared with projected statistics for 1967-77, the possibility of teacher surpluses at most levels and in most fields looms on the horizon, provided that

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both beginning teachers and former teachers returning to the profession. Thus the colleges would have been able to fill all of the vacancies at the secondary level even though no teachers from the non-teaching reserve had been available to teach.

society's teacher-utilization does not take a quantum jump, or that standards are not raised for entrance to the profession.

#### The Outlook for Enrollments

The point was made previously that enrollments in public elementary and secondary schools rose by 33 per cent between 1957 and 1967, going from roughly 33 million in 1957 to 55 million in 1967, for an average annual increase of 1 million students. The ten-year increase was approximately 11 million, of which 4.5 million came at the elementary level and 6.5 million at the secondary level.

TABLE 5

PROJECTIONS OF FALL ENROLLMENTS IN PUBLIC ELEMENTARY AND  
SECONDARY SCHOOLS OF THE UNITED STATES,  
1968 THROUGH 1976

(In Thousands)

Year	Elementary	Secondary	Total
1968	27,600	17,200	44,800
1969	27,500	17,800	45,300
1970	27,300	18,300	45,600
1971	26,900	18,900	45,800
1972	26,400	19,400	45,800
1973	25,900	19,900	45,800
1974	25,500	20,200	45,700
1975	25,200	20,400	45,600
1976	25,100	20,600	45,700
Increase or Decrease	-2,500	+3,400	+ 900

Source: U. S. Department of Health, Education, and Welfare, Office of Education, Projections of Educational Statistics to 1976-77 (1969 Edition), Table 3.

Table 5 indicates that projected enrollments for the decade ahead fall far short of enrollments in the previous decade. In fact, projections indicate that elementary-school enrollment will actually decline over the next decade, chiefly because the number of births in the United States declined over the past seven consecutive years, falling from 4.3 million in 1960 to just under 3.5 million in 1968. The United States Office of Education foresees a decrease of 2,500,000 students at the elementary level for the public school sector between 1968 and 1976.<sup>10</sup> At the secondary level, it is expected that there will be continued increases, although not at the same rates as between 1957 and 1967. Secondary enrollments are projected to rise by 3.4 million students by 1976, as compared with an increase of 6.5 million in the previous decade.<sup>11</sup>

#### The Outlook for Teacher Production

Whereas public school enrollments have already begun to level off, the production of teachers is just beginning to soar. At the beginning of the decade 1957-67, colleges and universities were producing approximately 41,000 elementary and 57,000 secondary teachers per year. At the end of the decade, the production was more than twice that at the beginning, an estimated 78,000 elementary teachers and more than 125,000 secondary teachers.<sup>12</sup> Thus while teacher production at

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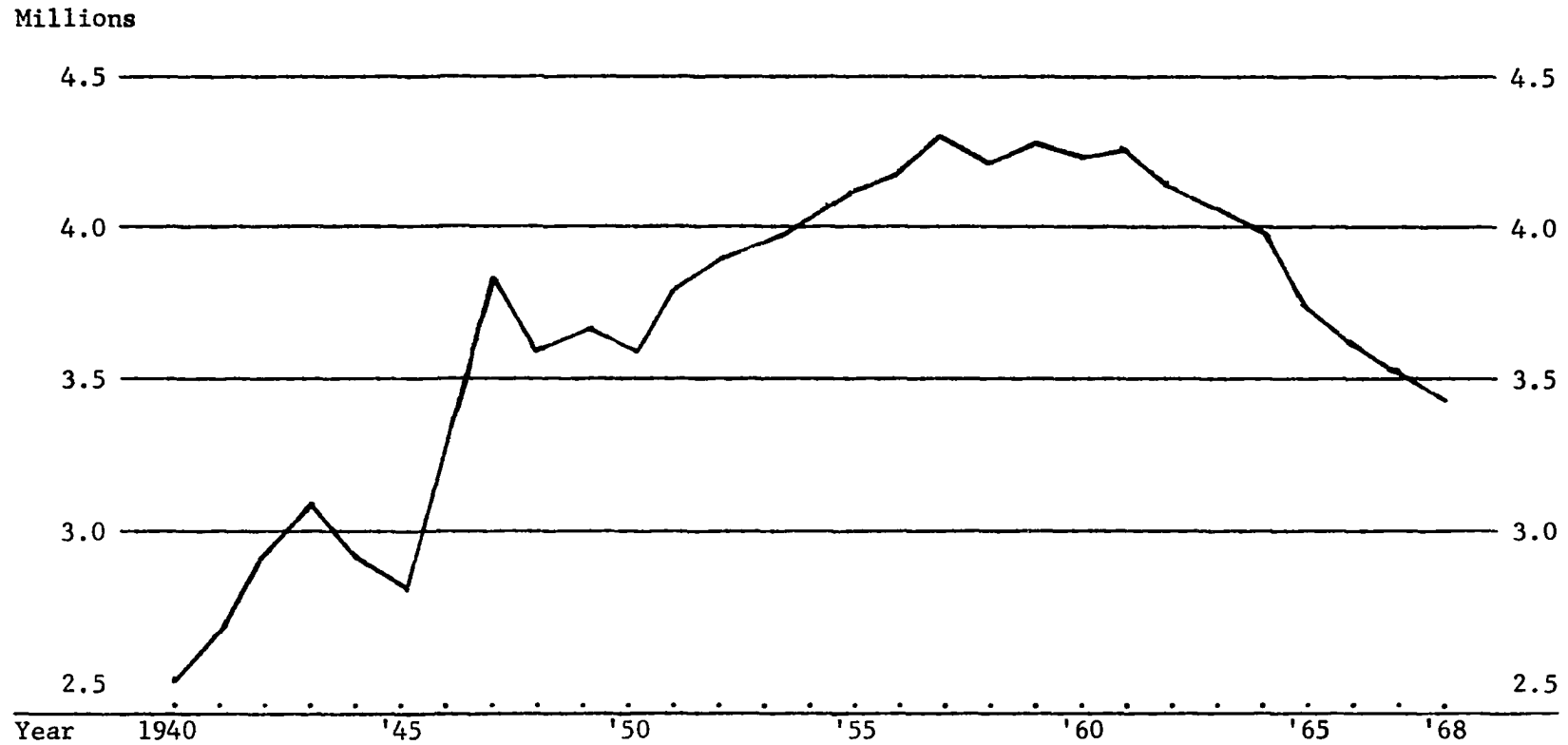
<sup>10</sup>USOE, Projections of Educational Statistics to 1976-77, Table 3.

<sup>11</sup>Ibid.

<sup>12</sup>NEA, Teacher Supply and Demand: 1967, p. 52.

FIGURE 2

NUMBER OF BIRTHS IN THE UNITED STATES,  
1940 THROUGH 1968, IN MILLIONS



Sources: For 1940 through 1966, American Council on Education, A Fact Book on Higher Education: First Issue/1967, p. 16. For 1967 and 1968, National Industrial Conference Board, Inc., "Road Maps of Industry," No. 1611, February 1, 1969.

the elementary level has gone up by 90 per cent over the past decade, elementary enrollments have shown only a 20 per cent increase; and whereas secondary enrollments have increased by 65 per cent, the number of secondary teachers produced has skyrocketed by 120 per cent.

Not only has the production of teachers outraced the growth in student enrollments over the past decade, but a look into the future reveals that the upward trend has merely begun. Provided that present trends continue, the nation's colleges and universities will be turning out nearly twice the number of elementary teachers in 1977 as in the year 1967. When it is considered that the number of elementary pupils is expected to decrease between now and 1977, it will be seen that a surplus is more than possible--it is assured.

Over the past decade, the number of elementary school teachers went up by 240,000, from 786,000 in 1957 to approximately 1,027,000 in 1967. Of the 240,000 additional teachers hired over the past decade, nearly 160,000 were for the purpose of meeting enrollment increases, with the remainder being devoted to a reduction of pupil-teacher ratios. For the upcoming decade, the only teachers needed at the elementary level will be for the purpose of replacing losses from normal attrition, and for a further reduction in pupil-teacher ratios. The net loss from turnover is currently estimated at about five per cent.<sup>13</sup> Provided that there is a total of 1.1 million teachers at the elementary

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<sup>13</sup>For a complete discussion of teacher turnover, see Frank Lindenfeld, U. S. Department of Health, Education, and Welfare, Office of Education, Teacher Turnover in Public Elementary and Secondary Schools, 1959-60, (U. S. Government Printing Office, 1963), 28 pp.



level in 1977 for an enrollment of 25.1 million--which would provide for a pupil-teacher ratio of 25-to-1--then the need for teachers to be produced by the colleges would be on the order of 55,000 per year. If it can be assumed that about 80 per cent of the expected production of elementary teachers in 1977 (140,000) would be available to teach, then the expected surplus for the nation would be in the neighborhood of 65,000 to 70,000 per year.

At the secondary level, the story is more of the same. Assuming a pupil-teacher ratio of 20-to-1, and a pupil enrollment of 20.6 million, the total number of secondary teachers in the public schools will be on the order of 1 million. The replacement of teachers to fill normal attrition losses for these teachers can be expected to run on the order of 50,000 per year, and the need for teachers to meet growth increases of 250,000 students per year will call for another 12,500 per year, or a combined total of 62,500 per year in 1977. Provided that about two-thirds of the projected number of potential secondary education graduates in that year (220,000) are available to teach, then the number of available teachers would total 145,000, which would make for a surplus of some 80,000 per year in secondary education.

Degrees Conferred, 1957-1977.--Table 6 indicates that at the beginning of the decade 1957-67, the number of bachelor's and first professional degrees conferred by colleges and universities was slightly in excess of 340,000. By the end of the decade, that number had grown to approximately 595,000, an increase of about 75 per cent. As was pointed out previously, the increase in the production of

teachers at the elementary level by the colleges during that same decade was from 41,000 to 78,000, or a percentage increase of 90 per cent. At the secondary level, the increase in teacher production was from 57,000 to 125,000, a percentage increase of almost 120 per cent. Thus the production of teachers increased faster at both the elementary and secondary levels than the increase in total graduates.

TABLE 6  
BACHELOR'S AND FIRST PROFESSIONAL DEGREES CONFERRED  
IN THE UNITED STATES, 1957-67 ACTUAL,  
WITH PROJECTIONS FOR 1967-77

Actual		Projected	
Year	Degrees	Year	Degrees
1956-57	340,347	1966-67	594,862
1957-58	365,748	1967-68	700,000
1958-59	385,151	1968-69	768,000
1959-60	394,889	1969-70	765,000
1960-61	401,784	1970-71	780,000
1961-62	420,485	1971-72	810,000
1962-63	450,592	1972-73	848,000
1963-64	502,104	1973-74	890,000
1964-65	538,930	1974-75	929,000
1965-66	555,613	1975-76	966,000
1966-67	594,862	1976-77	1,000,000
10-Year Inc.	254,515 (74.8%)	10-Year Inc.	405,138 (68.1%)

Sources: Degree data for the year 1956-57 through 1966-67 from U. S. Department of Health, Education, and Welfare, Office of Education publications on Earned Degrees Conferred by Institutions of Higher Education (1956 through 1966-67). Projections based on ratios contained in Projections of Educational Statistics to 1976-77, (1967 Edition), U. S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Table 18 (as updated by the addition of actual degree data for the years 1965-66 and 1966-67).

At the end of the decade 1967-77, the total number of bachelor's and first professional degrees is projected to top the one-million mark, as compared with approximately 600,000 at the beginning of the decade. This would mean a percentage increase of about 70 per cent. Provided that the number of persons preparing to teach also goes up by 70 per cent during that period, there would be in excess of 130,000 elementary teachers and 210,000 secondary teachers produced by the year 1977. However, since enrollment in teacher education programs has been going up faster than the total number of degrees, those numbers could be expected to be greater at both levels than projected here--probably in the neighborhood of 135,000 to 140,000 for elementary teachers and 220,000 to 225,000 for secondary teachers. Either of the projected levels would provide a substantial surplus by 1977 in the event that present trends of teacher utilization continue.

#### Summary

In summarizing the prospects for teacher education in the decade ahead, it would not be amiss to conclude that a substantial surplus of teachers can be envisioned in the early years ahead, at both elementary and secondary levels. For the elementary schools it is projected that there will be a surplus of 65,000 to 70,000 teachers per year being produced by 1977, provided that current trends continue. At the secondary level, the surplus is expected to be in the neighborhood of 80,000 per year by 1977. These surpluses are certain to occur, provided that public policy with regard to teacher education does not change drastically within the next three years.

## CHAPTER III

### NATIONAL TEACHER SUPPLY AND DEMAND: 1967

In the late 1940's the nation's colleges and universities geared up at maximum levels for the production of teachers for the public schools, not only for the purpose of replacing those teachers drawn out of the classrooms during World War II, but also in response to the need for additional teachers to take care of the expected influx of the "war babies," who began crowding into the elementary schools in the early 1950's.

Each succeeding year has seen an increase in both the number and percentage of college graduates planning to become teachers. In 1957, the National Education Association reported that a total of 40,801 students planning to become elementary teachers had graduated from the nation's colleges and universities. That figure represented 12 per cent of the total bachelor's and first professional degrees conferred by colleges and universities in that year. In 1967, there were 77,703 elementary education teachers produced, equal to 15.0 per cent of the 594,862 graduates at the bachelor's and first professional level.<sup>1</sup> For secondary education, the estimated percentages of students prepared for teaching careers has gone up from 56,785 in 1957--or 16.7

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<sup>1</sup>National Education Association, Teacher Supply and Demand in Public Schools, 1967, Research Report 1967-R18, Table 21; and U. S. Department of Health, Education, and Welfare, Earned Degrees Conferred by Institutions of Higher Education, (1956-57 through 1966-67).

per cent of total degrees conferred--to a 1967 figure of 125,598--or 21.1 per cent of total degrees conferred. Thus the figures show that the estimated percentage of students prepared to teach has gone up from 28.7 per cent of total degrees conferred in 1957 to a 1967 figure of 34.1 per cent.<sup>2</sup>

Even though teachers constitute the nation's largest single profession, outnumbering engineers by slightly more than two-to-one, there is a serious question as to whether one-third of the total output of the colleges and universities should continue to be devoted to the production of teachers. In the late 1940's and early 1950's, it was undoubtedly good public policy to devote the very highest priority toward that purpose, not only to replenish the depleted teacher reserve, but also in anticipation of unprecedented increases in student enrollment. Today, however, when production is at an all-time high, and when all signs point toward lessened increases in student enrollment over the next decade, it would appear to be good procedure to re-examine the supply and demand picture at some length. This chapter will attempt to provide such an analysis for the latest year for which statistics are available.

#### Procedures for Computing Teacher Demand

Each year, demand for new teachers arises mainly from two sources: the need to staff additional classrooms because of the growth in number of students; and the need to replace teachers lost

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<sup>2</sup>Ibid.

to the profession through attrition. Of the two, the need for replacement is a more important factor in creating demand for teachers than growing enrollments. It is a relatively easy task to estimate the number of teachers needed for pupil growth; on the other hand, it is extremely difficult to gauge the number needed for replacement purposes. In order to arrive at that figure, it is necessary to know the number of teachers expected to leave the profession for one reason or another, whether through death, retirement, or transfer to another occupational field.

#### Teacher Turnover

There has been only one national study of teacher turnover within the past decade, that one having been published by the United States Office of Education in 1963. Research from that study, done by Frank Lindenfeld, revealed that 8.1 per cent of the teaching staff in public schools left the teaching profession during the 1959-60 year.<sup>3</sup>

Other results of the study by Lindenfeld include the following: The total turnover of teachers in the public schools for the 1959-60 year was equal to 13.4 per cent of the teaching staff for the previous year. Of the total teachers hired during the 1959-60 year, 45 per cent had not taught in the public schools before, 23 per cent were re-entering teachers drawn from the pool of experienced personnel

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<sup>3</sup> Frank Lindenfeld, Teacher Turnover in Public Elementary and Secondary Schools: 1959-60, U. S. Department of Health, Education, and Welfare, Office of Education, 1963, 28 pp.

not employed in the public schools the previous year, and 32 per cent were transferring teachers who had been employed in some other public school system the previous year. The study also showed that of the total number of teachers who left public school districts in that year, 9 per cent went on a leave of absence, 8 per cent retired, 2 per cent died, 13 per cent were dismissed, and 3 per cent changed to a nonteaching job in the same school system. Just under two-thirds of the total who left were classified as "other separations." Many of the latter probably transferred from one school district to another.<sup>4</sup>

As pointed out in a previous chapter, the use of the teacher turnover study by Lindenfeld, though it is a landmark in its field, is subject to criticism because the data are now ten years old. Nevertheless, that research is still being utilized by the National Education Association in its annual study on supply and demand, and is also used by the United States Office of Education, the Bureau of Labor, and other Federal agencies in their research and planning documents. For want of more recent data, the Lindenfeld research must stand until it is repeated. It must therefore be assumed, as far as national turnover is concerned, that total teacher turnover is on the order of 13 to 14 per cent, and that net turnover (teachers actually leaving the profession) is in the neighborhood of 8 per cent.

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<sup>4</sup>Ibid., pp. 6-7.

NEA Estimate of Demand

In its latest supply and demand study, the National Education Association estimated the net rate of teacher turnover in public schools to be 8.1 per cent for elementary teachers and 8.6 per cent for secondary teachers.<sup>5</sup> The rationale for that organization's computation of teacher demand at the elementary level for the year 1968 follows: The number of elementary teachers in service in the public schools in 1967 was estimated at slightly over 1 million. When the net rate of turnover for elementary teachers (8.1 per cent) was multiplied times 1 million, the resulting product was slightly in excess of 80,000. That figure comprised the total need for replacing teachers who left the profession for one reason or another--death, retirement, illness, pregnancy, or to accept some other kind of employment.

In addition to the calculation of need for replacement of teachers lost through attrition, there was also the necessity to calculate enough additional teachers to take care of student growth. If it were assumed, as it was, that an additional 500,000 elementary pupils would be enrolled in 1968 over 1967, then it would require approximately 20,000 additional teachers (at a ratio of 25-to-1) in order to take care of the growth at the elementary level.

When the demand for new teachers through attrition (80,000) was added to the demand for new teachers because of anticipated growth (20,000), the total was on the order of 100,000 new elementary teachers needed for the year 1968. The exact demand for elementary teachers in

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<sup>5</sup> National Education Association, Teacher Supply and Demand in Public Schools: 1967, p. 34.



1968 as calculated by the National Education Association was 103,381 new teachers.<sup>6</sup> That total is significant, since it represented the basic demand for new teachers in that year before the need was "idealized" to include a number of teachers other than those for which there was an historic market demand.

It is instructional to note that in arriving at its calculation of need for elementary teachers in 1968, the National Education Association used two separate computations: One of 103,381 (Adjusted Trend Criterion Estimate); and one of 248,529 (Quality Criterion Estimate). On the basis of the first computation, the national supply and demand were essentially in balance; on the basis of the second, the demand exceeded the supply by more than 145,000 teachers. Included in the Quality Criterion Estimate were 81,600 teachers to replace those having substandard qualifications; 18,548 teachers to reduce overcrowded classes, and 45,000 teachers to provide special instructional services.<sup>7</sup>

It is open to question whether there is a need to inflate the demand for elementary teachers by adding factors to replace teachers with substandard credentials and to reduce overcrowded classes. These problems would appear to be on the way to resolution through the replacement of teachers by natural attrition, and through the annual reduction of the teacher-pupil ratio. It was previously pointed out (page 27) that the percentage of elementary teachers not holding a

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<sup>6</sup>Ibid., Table 16.

<sup>7</sup>Ibid., Table 12.

bachelor's degree had gone down from 30 per cent in 1957 to only 8 per cent in 1967. It would therefore appear reasonable to assume that teachers with substandard credentials are already being replaced through normal attrition. Logic would dictate that older teachers probably fall short of meeting degree requirements to an extent greater than younger teachers; and as these older teachers retire, they are systematically replaced by others who hold the bachelor's degree.

In the same vein, it would appear reasonable to assume that as the pupil-teacher ratio declines (see Table 4), school administrators are moving to eliminate overcrowded classes. Of course, overcrowded classrooms may be as much a function of a lack of facilities as a lack of teachers.

The only one of the three items mentioned in the Quality Criterion Estimate which appears to have validity is the need of the schools for additional teachers to provide special instructional services, including teachers of the physically handicapped, the mentally disturbed, and for additional librarians and counselors. It should be pointed out, however, that these specialized personnel cannot be classified strictly as elementary teachers, since they must undergo education and training significantly different from that of elementary teachers. In addition, it is highly questionable whether school districts would have the financial resources to hire these additional personnel even if they were available.

In summary, it would appear that the Adjusted Trend Criterion Estimate (103,381) of demand for elementary teachers is the realistic or "hard" projection, and the Quality Criterion Estimate (248,529) is

the idealistic, or "soft" projection. To the extent that the latter projection is taken seriously by those who produce, rather than consume teachers, it is grossly misleading and has a tendency to encourage recruitment into a professional area for which the market demands are not firm.

#### Estimates of Demand for Secondary Teachers

The demand for secondary teachers is not as pressing as the demand for elementary teachers because of two basic factors: The number of secondary pupils is smaller than the number of elementary pupils; and the percentage of teacher education graduates majoring in secondary education is always greater than the percentage in training as elementary teachers. Nevertheless, projected patterns of growth at the secondary level for the next decade indicate that the demand for secondary teachers will be greater--both relatively and absolutely--than the demand for elementary teachers.

Teacher supply and demand data of the National Education Association for 1967 projected a 1968 demand for new secondary teachers at two levels: A computation calling for 98,750 new teachers (Adjusted Trend Criterion Estimate); and one calling for 136,000 (Quality Criterion Estimate). The Adjusted Trend Criterion Estimate, the more realistic of the two, was computed as follows: The number of secondary teachers in service in the United States was estimated at approximately 783,000. That figure multiplied times the estimated rate of turnover, 8.6 per cent, yielded a product on the order of 67,000. The estimated growth at the secondary level for 1968 over 1967 was estimated to be

about 600,000 pupils, which in turn created the need for an additional 32,000 teachers, based on a pupil-teacher ratio of about 20-to-1.

When the demand for new teachers through attrition (67,000) was added to the demand because of anticipated growth (32,000-plus), the total was put at 98,751.<sup>8</sup> That figure represented the basic demand for new teachers before the need was "idealized" to include an additional 37,215 teachers for replacement of those with substandard qualifications, reduction of overcrowded classes, and for the provision of special instructional services.

The same basic arguments for the acceptance of the Adjusted Trend Criterion Estimate (98,750), and for the rejection of the Quality Criterion Estimate (136,000) can be made for secondary education as was made previously for elementary education. At both levels, the Adjusted Trend Criterion Estimate is more likely to be realistic, and thus will be the one used in this paper to represent the actual demand.

#### Estimating Teacher Supply

The supply of elementary teachers is much more readily estimated than the potential supply of secondary teachers. This is true because elementary teachers tend to major in teacher education, whereas a high percentage of secondary teachers tend to major in a subject-matter area other than teacher education. In order to calculate the potential number of beginning elementary teachers, therefore, it is necessary only to ascertain the approximate number of degrees conferred

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<sup>8</sup>Ibid., Table 12.

in elementary education the previous year, and then estimate the percentage of these graduates planning to go immediately into teaching.

The National Education Association estimated the total number of elementary education majors who finished their programs during 1967 to be 85,000. Of these, approximately 70,000 were expected to enter the classroom immediately. As a further source of supply, it was estimated that about 32,000 former teachers would re-enter elementary teaching in 1968, making a total new supply calculated at 102,802.<sup>9</sup> When this estimate of supply is compared with the estimate of demand as set forth in the Adjusted Trend Criterion Estimate of 103,381, it can be seen that equilibrium has essentially been achieved at the elementary level in American education, except for specialized teachers such as physically, mentally, and emotionally handicapped, and for librarians and counselors, none of whom can be classified strictly as elementary teachers.

#### Supply of Secondary Teachers

The estimated number of secondary education graduates expected to complete preparation in colleges and universities for the year 1967 was put at approximately 129,000 by the National Education Association.<sup>10</sup> Of these, only about two-thirds (85,561) were expected to enter the classroom for the 1968 school year. The difference between the percentage of secondary graduates going directly into teaching (two-thirds)

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<sup>9</sup>Ibid., p. 48.

<sup>10</sup>Ibid., Table 9.

and the percentage of elementary graduates who do so (four-fifths) could be a function of the fact that more men major in secondary than in elementary education, and male graduates are less likely to begin teaching immediately because of military obligations. However, the fact of oversupply in some fields would have to be taken into account also.

When the number of teacher education graduates expected to enter the classroom (85,561) is added to the number of teachers from the reserve expected to re-enter teaching at the secondary level (23,247), the total potential supply is put at 108,108. When this supply figure is compared with the demand as measured by the Adjusted Trend Criterion Estimate of 98,750, the surplus of supply over demand is on the order of 10,000 secondary teachers. Of course, this is not to imply that all subject-matter fields are equally well-supplied, but it does suggest that secondary education as a whole is currently well-stocked, and is likely to become even better-supplied in the years ahead.

#### Summary

The National Education Association compiles annual data on teacher supply and demand at the national level, the only organization or agency involved in systematic manpower study in teacher education. That organization's latest study, compiled for the year 1967 and published in 1968, provides two separate indexes of teacher demand, the first of which is called the Adjusted Trend Criterion Estimate, and the second called the Quality Criterion Estimate. The Adjusted Trend

Criterion Estimate is a realistic estimate of need based on past hiring and utilization practices, whereas the Quality Criterion Estimate is an idealized estimate based on staffing patterns which the profession would like to see put into effect, provided that both the personnel and the financial resources were available.

At the elementary level, the National Education Association's estimate of need for teacher replacements (to replace those lost through attrition) for 1968 was put at approximately 80,000. In addition, it was estimated that 20,000-plus teachers would be needed to take care of expected pupil growth and to staff additional classrooms. The total basic need (Adjusted Trend Criterion Estimate) was put at 103,381 additional teachers for the year 1968 over the year 1967. The expected supply to meet this basic demand was estimated to be approximately 70,000 teachers expected to come from the colleges and universities, with an additional 32,000 to come from the teacher reserve (trained teachers who had not taught in the previous year). The total supply from these two sources was put at 102,802, as compared with the basic demand figure of 103,381. It will be noted that the supply and demand figures are essentially in equilibrium.<sup>11</sup>

At the secondary level, the estimate of needs for teachers to replace those lost through normal attrition was put at approximately 67,000 by the National Education Association. Added to this figure was the need for an additional 32,000-plus teachers because of expected growth at the secondary level, making a combined total need of 98,751

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<sup>11</sup>It should be emphasized that the Quality Criterion Estimate of need by the NEA was 248,529 at the elementary level, or 145,000 more than the Adjusted Trend Estimate being used here as indicative of the actual needs.

additional teachers in 1968 over 1967 (Adjusted Trend Criterion Estimate). The supply at the secondary level was computed to be approximately 85,500 to come from the colleges and universities, and for another 23,000-plus to come from the teacher reserve, making a combined total of approximately 108,000, as compared with the needs estimate of 98,751. Provided that the Adjusted Trend Criterion Estimate is used as indicative of the actual needs of public schools for teachers, then there is already a substantial surplus of secondary teachers in the United States.



## CHAPTER IV

### TEACHER EDUCATION IN OKLAHOMA: AN OVERVIEW

Teacher education is by far the most important business of Oklahoma higher education, accounting for nearly one-half of the production from Oklahoma colleges and universities annually at the bachelor's level. Approximately one-third of the bachelor's level graduates formally major in the field of Education, and another large group of graduates, though not choosing to major in Education, nevertheless complete a standard teacher education certificate program which qualifies them to teach in the public schools.<sup>1</sup>

A study of 1,892 recent bachelor's level graduates from Oklahoma colleges and universities revealed that 989, or 52.8 per cent, planned to become teachers at some academic level.<sup>2</sup> Of those 1,892 graduates, 35 per cent majored in teacher education, and an additional 17.8 per cent planned to become teachers, even though they had not taken a degree in the field of Education.<sup>3</sup>

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<sup>1</sup>Data in the files of the Oklahoma State Regents for Higher Education indicated that 31.2 per cent of the bachelor's and first professional graduates from Oklahoma colleges and universities in 1967-68 majored in Education. The national average in that year was 20.3 per cent with a major in Education.

<sup>2</sup>John E. Cleek, An Investigation of the Academic Performance, Career Expectations, and Post-Graduation Migration Plans of Selected Nonresident Undergraduates in Oklahoma Institutions of Higher Education, 1962-66, unpublished doctoral dissertation, University of Kentucky, 1967, pp. 50-51.

<sup>3</sup>Ibid., p. 43.

Oklahoma currently ranks first in the United States with regard to the percentage of its elementary and secondary teachers holding a bachelor's or higher degree.<sup>4</sup> Such an accomplishment is perhaps surprising in view of the fact that Oklahoma ranks in the lower quintile among the states in average salary paid to public school teachers. A recent report shows that Oklahoma teachers in 1967-68 received approximately \$1,400 below the national average in teachers' salaries, and from \$400 to \$1,200 below average salaries paid teachers in states surrounding Oklahoma, with the single exception of Arkansas.<sup>5</sup> Obviously, Oklahoma has not attained its present lofty position with respect to the academic preparation of its teachers by recruiting them from the outside--its salary levels preclude that. It is thus logical to conclude that its teachers are largely home-grown.

Studies of the National Education Association reveal that Oklahoma is one of the few states in which the supply consistently outruns the demand at both elementary and secondary levels. In 1966, for example, it was reported that Oklahoma was one of only seven states which produced a surplus of new elementary teachers. At the secondary level, the surplus was 830 teachers in that year, which figure included only beginning teachers, not counting the surplus generated by those in the

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<sup>4</sup>A recent publication of the National Education Association revealed that in 1967, some 99.9 per cent of Oklahoma's elementary and 100 per cent of its secondary teachers held a bachelor's or higher degree.

<sup>5</sup>U. S. Department of Health, Education, and Welfare, Office of Education, Digest of Educational Statistics: 1968 Edition, Table 53.

teacher reserve who wished to re-enter the profession.<sup>6</sup> The number of Oklahoma graduates who went out of state to teach in that year was reported to be about 1,000.<sup>7</sup>

#### Background of Oklahoma's Teacher Surplus

It is perhaps difficult to comprehend how Oklahoma is able to produce an annual surplus of teachers in the face of acknowledged shortages in other states. A short review of the historical and sociological framework within which the system evolved should be helpful in gaining an understanding of the present situation concerning Oklahoma's production and utilization of teachers.

Oklahoma's citizens had access to universal higher education even before universal secondary education became a reality. One of the initial acts of the First Territorial Legislature was to provide a system of higher education for the Oklahoma Territory. In December of 1890, the Legislature created a state university to be located at Norman, an agricultural and mechanical college at Stillwater, and a normal school at Edmond. All of these institutions were given the function of providing teachers for Oklahoma's public schools.

A report published by the Oklahoma State Regents for Higher Education further documents the history of the higher education movement:

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<sup>6</sup> National Education Association, Teacher Supply and Demand in Public Schools, 1966, Research Report 1966-R16, October, 1966, p. 75.

<sup>7</sup> Ibid., p. 25.

By the time that the Oklahoma and Indian Territories merged in 1907 to form the State of Oklahoma, Oklahoma Territory was operating a state university, a land-grant college, three normal colleges, a Negro land-grant agricultural and normal school, and a university preparatory school. It was not until 1908 that old Indian Territory received its first state institution of higher learning.<sup>8</sup>

The State Regents' report goes on to say:

After statehood, the first few legislatures attempted to balance those institutions already operating in Oklahoma Territory with an equal network of state institutions in the Indian Territory. How well they succeeded is indicated by the fact that by 1919, a total of 20 institutions had been created, 10 of which were located in Oklahoma, and 10 in Indian Territory. Thus, Oklahoma's present system of higher education is actually a synthesis of two parallel systems. This helps to account for some of the duplication of institutions and effort which has plagued Oklahoma higher education in the past. Conversely, it also helps to account for the fact that Oklahoma is now among the leading states in the nation in the provision of higher education opportunity for its citizens.<sup>9</sup>

Today, Oklahoma ranks among the top seven states of the nation in providing higher education for its population, with one state institution of higher learning for each 107,000 citizens (see Table 7). More than two-thirds of the state's high school graduates currently start to college, and this unusually high attendance rate helps to explain why the percentage of Oklahoma's population enrolled in college is more than 4 per cent, as compared with a national percentage of approximately 3.7 per cent of the population enrolled in college.

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<sup>8</sup> John J. Coffelt and Dan S. Hobbs, Goals for Oklahoma Higher Education (Oklahoma State Regents for Higher Education, 1966), p. 4.

<sup>9</sup> Ibid.

The fact that Oklahoma sends more students on to college than the national average helps to explain why more teachers are produced per capita in Oklahoma than in the average state, but it does not explain why the percentage of students majoring in teacher education is 50 per cent higher in Oklahoma than in the nation at large. For an explanation of this factor, the state's social and economic mileau must be examined.

Because Oklahoma was settled initially by small farmers and poor working people, its early population was largely unlettered. The people did, however, have a high degree of respect for public education, as evidenced by the concern of the Territorial Legislature for its early provision. If the people could not give their children wealth, or family tradition, they could at least give them opportunity-- and this opportunity they provided in the form of public higher education.

Through the years, the children and grandchildren of the founding fathers have taken advantage of this educational opportunity. Because they have come from poor families, Oklahoma's higher education students for the most part have not aspired to lofty professional careers such as medicine or law, nor to executive careers in business; instead, their aspirations have been confined to a more realistic professional level--that of teaching.

Because of the rapid shift of people in Oklahoma from agricultural to non-agricultural pursuits, and because there has been little in the way of non-agricultural industry to compete with teaching as a

TABLE 7  
 RATIO OF STATE INSTITUTIONS OF HIGHER LEARNING  
 TO STATE POPULATION: 1965

Rank	State	Total No. of Institutions	State Population Per Inst.	Rank	State	Total No. of Institutions	State Population Per Inst.
1	North Dakota	9	72,222	27	Connecticut	8	359,375
2	Vermont	5	81,000	28	Louisiana	10	360,300
3	South Dakota	7	97,429	29	Kansas	6	375,000
4	Montana	6	117,000	30	Arizona	4	404,500
5	New Hampshire	5	136,200	31	Virginia	11	409,727
6	Maine	7	140,429	32	Wisconsin	10	416,100
7	OKLAHOMA	18	144,588	33	Maryland	8	451,625
8	West Virginia	11	163,091	34	Nevada	1	454,000
9	New Mexico	7	170,333	35	Texas	22	488,727
10	Utah	5	201,600	36	Kentucky	6	530,500
11	Minnesota	17	210,353	37	Tennessee	7	554,714
12	Idaho	3	231,334	38	Washington	5	596,000
13	Mississippi	10	232,700	39	Missouri	7	644,000
14	Georgia	19	234,684	40	Florida	9	660,111
15	Arkansas	8	244,375	41	New Jersey	10	689,800
16	Colorado	8	247,125	42	Hawaii	1	718,000
17	Delaware	2	256,000	43	Pennsylvania	16	723,875
18	Massachusetts	20	269,150	44	New York	25	730,320
19	Alaska	1	272,000	45	Michigan	10	837,400
20	Oregon	7	279,288	46	Iowa	3	915,667
21	Nebraska	5	291,200	47	California	17	1,112,824
22	Rhode Island	3	299,333	48	Indiana	4	1,229,500
23	North Carolina	16	312,500	49	Ohio	7	1,472,142
24	Alabama	11	319,727	50	Illinois	7	1,531,714
25	Wyoming	1	329,000				
26	South Carolina	6	331,000		TOTAL	431	446,992

Sources: Institutional data taken from U. S. Department of Health, Education, and Welfare, Education Directory: 1965-66--Part 3 Higher Education. Population data taken from U. S. Bureau of the Census, "Estimate of the Population of States," 1965.

career, teacher education has attracted candidates almost by default. It has been, in fact, one of the few socially acceptable ways through which Oklahoma high school graduates could get "up and out." As an avenue of social mobility, therefore, teacher education has performed a valuable and much-needed social function. Now, however, it appears that this avenue is about to be closed off. What might happen in the event that Oklahoma would no longer be able to export its unemployment is a concern of the present research.

#### The Structure for Teacher Education

Teacher education in Oklahoma is the responsibility of a number of agencies and groups, including the State Board of Education, the Oklahoma Legislature, the Oklahoma State Regents for Higher Education, institutions of higher learning, local public school systems, certain statutory commissions, and the organized profession itself. Some of these agencies and groups have constitutional and statutory responsibilities with regard to policy making and administration of teacher education, while others participate only in a quasi-legal or advisory capacity. A brief description of the functions of the principal participating agencies and groups involved in teacher education follows:

##### The Oklahoma Legislature

The Oklahoma Legislature has the responsibility under the Constitution of the State of Oklahoma to prescribe the powers and duties of the State Board of Education, which is the governing board for the

Public School System of the State. Therefore, the Legislature has general authority to legislate with regard to matters such as determining who shall teach in the elementary and secondary schools of the State; setting the qualifications of those teachers; providing for the licensure of teachers and other personnel; and like matters. Although possessing general authority to legislate in these areas, the Legislature has delegated most of its powers in this regard to the State Board of Education, a description of whose powers and duties follows.

#### The State Board of Education

The State Board of Education is a seven-member constitutional board charged with the governance of the State Department of Education and the Public School System of the State. The State Superintendent of Public Instruction, an elected official, is a member and President of the State Board. The six other members are appointed by the Governor by and with the advice and consent of the Senate. The statutes provide that the State Board of Education, among its other duties, shall:

. . . have full and exclusive authority in all matters pertaining to standards and qualifications and the certification of persons for instructional, supervisory and administrative positions and services in the public schools of the State, and shall formulate rules and regulations governing the issuance and revocation of certificates for county superintendents of schools, district superintendents of schools, principals, supervisors, librarians, school nurses, school bus drivers, visiting teachers, classroom teachers, and for other personnel performing instructional, administrative and supervisory services . . . <sup>10</sup>

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<sup>10</sup>Article II, Section 22, Paragraph 9, School Laws of Oklahoma: 1968, State Superintendent of Public Instruction.



It should be recognized that even though the State Board of Education has "full and exclusive authority" pertaining to matters of professional standards, certification, and the like, this authority is occasionally modified by the Legislature.

For the administration of its duties and responsibilities in teacher education, the State Board has created the Division of Teacher Education and Certification, which agency performs the function of accrediting teacher education certificate programs at institutions of higher learning in Oklahoma, as well as the function of certifying teachers, administrators and other personnel to be employed by the elementary and secondary schools of the State. The Division of Teacher Education and Certification is also generally responsible for data collection and record-keeping with regard to teacher education and certification.

#### The Oklahoma State Regents for Higher Education

The Oklahoma Constitution and Statutes provide that the Oklahoma State Regents shall, among other things: prescribe standards of higher education applicable to each institution in the State System; and determine the functions and courses of study in each of the institutions to conform to the standards prescribed. The State Regents therefore have the responsibility for setting standards for admission to programs of teacher education, as well as standards for retention in and graduation from those programs; also, the State Regents are responsible for approving the courses and programs to be offered at all institutions in the State System, including teacher education

certificate programs. In practical terms, an institutional program must first be approved by the State Regents before it is submitted to the State Department of Education for accreditation approval.

#### Oklahoma Colleges and Universities

Four-year colleges and universities with teacher education functions have the responsibility for developing teacher education certificate programs; for the selection and admission of students into these programs; for the supervision of the student-teacher, or internship experience; and for making recommendations to certification agencies with regard to the academic and/or personal fitness of a candidate to be certified.

#### Local School Systems

Local school systems play an unofficial, yet vital role in the teacher education process, through furnishing the laboratory situation in which apprentice teachers undergo their student-teaching experience. Not only do local school systems furnish the laboratory, but also much of the supervision for student teachers. It is interesting to speculate what might be the effect on the present program of teacher education should the Oklahoma City or Tulsa systems decide no longer to underwrite the student-teaching experience for colleges and universities.

#### The Teaching Profession

The teaching profession plays an important role in the teacher education process by serving on state-level boards and

commissions dealing with the development of standards and certification requirements, and also by accepting responsibility for the partial supervision of student teachers, often at personal time and sacrifice. The profession also helps finance the administration of the teacher education and certification program through the payment of a fee in exchange for the issuance of certification credentials by the State Department of Education.

#### Professional Standards Board

The Oklahoma Legislature in the spring of 1969 passed House Bill No. 1180, creating a board to be known as the Professional Standards Board for the State of Oklahoma. The general function of the Professional Standards Board will be to provide leadership for the improvement of teacher education and standards and for the certification of teachers and other education personnel in Oklahoma, and to serve in an advisory capacity to the State Board of Education in all matters of professional standards and certification.

The new board, composed of twenty-five members representing all agencies and groups involved in teacher education, will perform essentially the same functions that were formerly carried out in a quasi-legal fashion by the Teacher Education and Professional Standards Commission (TEPS). Whether or not the creation of the new board will change the balance of power among the various segments of teacher education remains to be seen. The action might well be a move to take standards out of the hands of the

organized profession and place them under closer governmental scrutiny.

#### Teacher Education Policy in Oklahoma

For many years, Oklahoma has produced an annual number of elementary and secondary teachers large enough to supply not only its own needs, but to provide teacher manpower for export to other states as well. Those states receiving Oklahoma-trained teachers have found themselves the recipients of young talent at no production costs to their respective state budgets, and the savings thus realized have been passed on to their teachers in the form of higher salaries. Thus Oklahoma has indirectly helped to underwrite the educational costs of other states, enabling its competitors to attract and retain a better quality of teachers than would otherwise have been possible.

In one sense, it is probably fortunate that Oklahoma has been able to provide manpower for export, since it has thereby been able to export much of its unemployment problem as well. Had its teachers stayed at home, they would have been in competition with other Oklahoma teachers for a limited number of jobs, which would have served to further depress an already depressed teacher market. The state may therefore have been acting in its own best interests by over-producing in the field of teacher education. However, there are some negative aspects of the problem to be considered also. Had the state been able to exercise a choice, it probably would have preferred to export unskilled labor, rather than highly educated teaching talent in the upper 20 per cent of the population with regard to aptitude

and academic achievement. This speculation is based on the assumption, of course, that Oklahoma has not been able to provide all the jobs needed to keep its young people at home, an assumption which may or may not be valid.

Over the years there have been sporadic expressions of concern on the part of both legislative and executive branches of state government that Oklahoma might be training too many teachers, but these expressions have not been documented with facts and figures, and have generally been refuted by spokesmen for teacher education. The single most effective argument in favor of a teacher shortage rather than a surplus is the fact that beginning teachers are in greater demand than ever before, a true contention. School superintendents support this notion by pointing out how difficult it is to hire certain kinds of teachers at certain times of the year.

Also in favor of the argument that no surplus exists are most institutions which train teachers, who cite figures to show that their recent graduates are not only in great demand, but that they are for the most part remaining in Oklahoma to teach. This latter point is particularly important to legislators, who generally are convinced that too many of the state's young people are leaving Oklahoma after receiving their education at public expense.

The arguments put forward by those involved in teacher education, even though true, tend to cloud the real issue by focusing only on one aspect of the problem--that of production and short-term utilization--while ignoring an equally valuable aspect--that of long-term teacher utilization. It is true that there is a lively demand for

beginning teachers just out of the colleges, but this does not speak to the question of whether those teachers trained in Oklahoma five years ago are also able to find jobs. It is also true that some Oklahoma administrators have difficulty in late summer in attracting qualified teachers in some subject-matter areas. This does not by any means prove, however, that there is a general teacher shortage--only that there is a local shortage at a given calendar period. It is equally true, as teacher-training institutions assert, that most of their graduates remain in Oklahoma to teach in the year following their graduation. This does not mean, however, that many of these same graduates will not leave the state at some early point in the future.

Since the data currently available do not allow us to know with any degree of precision how many of those trained at Oklahoma institutions over the past few years are currently teaching within the state, it would appear that an area of fruitful research for the future would be that of long-term utilization of teachers, in contrast to the kind of research that has occupied the profession over the past two decades. Provided that a very high percentage of those trained in teacher education were found to be leaving the state, it is easy to envision the reaction on the part of both the profession and the state to effect a change in the situation. Since the facts are not available at present, no change is currently called for; however, the absence of such an outcry should not deter those with responsibility for the development of public policy in teacher education from seeking the truth, although the truth might be more difficult to live with than ignorance.

## Who Should Be Allowed to Teach

Perhaps the overriding public policy question concerning teacher supply and demand deals with the problem of whether an individual has the right--or at least should have the choice--to pursue a program in teacher education regardless of the needs of society for teacher manpower. In the past, this problem was not a major one, even though Oklahoma had a sufficiency of teachers in most fields. As long as the national market remained open, it was in order for Oklahoma colleges to encourage individuals to follow teaching as a career, regardless of whether they could be expected to find suitable employment in Oklahoma.

Today, the problem is a different one. The national market may soon be virtually closed to Oklahoma teachers. This means that Oklahoma must come to a decision at the public policy level as to whether the number of teachers produced should be geared to the number of jobs expected to be available, or whether students should be allowed to pursue their professional ambitions regardless of labor conditions.

Obviously, the right to choose one's profession is not absolute. For example, not everyone can become President of the United States. First, one must meet certain qualifications with regard to place of birth, age, citizenship, and political party affiliation. Next, he must obtain the approval of his political party and then of the people at large. Even after one attains the position, he cannot hold it permanently.

In like manner, not everyone has the right or the opportunity to enter upon a career in medicine or in law. An aspirant to each of these professions must pass a series of hurdles before being admitted to the inner circle. The organized profession itself, usually through the power of the state, exercises limitations on the number of entrants through a variety of means, including devices such as specialized accreditation of professional schools, examination for licensure, and the like. All these are of course mechanisms to protect the public, but they also help to keep the number of professionals at a level consonant with the demand for services.

Even teacher education is restrictive in its requirements, though probably less so than most other professions. There are, however, minimum admissions requirements, minimum academic achievement standards, and certification requirements to be satisfied before one can become a teacher. The right to teach is thus not absolute: there are conditions which must first be satisfied before entrance. The question of whether everyone has the right to become a teacher has thus already been answered in the negative. Therefore the public policy question involved is, who should participate in setting standards for the profession, and at what levels should they be set?

As mentioned earlier in this chapter, there is a shared responsibility with regard to who controls teacher education in Oklahoma. In the public sector, the State Regents determine admissions standards for professional programs, usually upon recommendation of the institutions themselves. At the level of certification, it is the State Board of



Education which determines standards, generally upon the recommendation of the profession itself through the agency of various quasi-legal and statutory committees and commissions. Thus a single board, either the State Regents or the Board of Education, could effect some control on the size of the profession through unilateral action. Also, the Legislature could conceivably move into this area if it deemed such action necessary or convenient to the public good.

Although any one of the above agencies could take unilateral action to expand or contract the size of the teaching force in relation to the manpower market, the problems involved are so complex, and the interactions so entwined, that it would take the cooperation of all groups and agencies involved to effect a workable system. Assuming that such a system could be devised, it would require information inputs and cooperation from the State Department of Education, local school districts, the State Regents, institutions of higher learning--both public and private--and from the Legislature.

If it is ultimately determined that teacher supply should be related as closely as possible to teacher demand, what is the best way to effect such a program? Should the market be allowed to operate, so that the price paid for teachers would be lowered in times of surplus, and raised in times of shortage? If so, then the Legislature would be required to remove the current price supports from teachers' salaries, in order to let them seek their own level. In such a market, the organized profession might find it more profitable to limit teacher input than to strive for higher salaries and better working conditions using present methods. Local school districts located in remote areas

might find themselves paying a much higher price for the same teacher than an urban school district. These are only examples of the kinds of things which could be expected in a free teacher market.

It is highly unlikely that the present system will be abandoned immediately in favor of a free market approach. The present economy, one which is half-free and half-managed, will no doubt continue until conditions force a change. What is called for at this point in history is a cooperative re-examination of public policy in this vital area by all groups and agencies with responsibility for the production and utilization of teachers in Oklahoma.

## CHAPTER V

### TEACHER DEMAND IN OKLAHOMA PUBLIC SCHOOLS

As pointed out in a previous chapter, the demand for new teachers arises principally from two sources: the need to staff additional classrooms because of increases in the number of students; and the need to replace teachers lost through attrition. Of the two, the need for replacement of teachers lost through attrition is a more important factor than growing enrollments. Over the past decade, however, enrollment increases have accounted for a significant part of the demand for new teachers in Oklahoma. Table 8 shows that enrollment in grades 1 through 12 increased by more than 90,000 in Oklahoma public schools for the decade 1957 through 1967, a percentage gain of approximately 18 per cent.

Of the increases over the past decade, growth at the elementary level (grades 1 through 6) accounted for about one-third of the total, and increases at the secondary level (grades 7 through 12) accounted for the remaining two-thirds. Elementary enrollments went up from 279,000 in 1956-57 to 312,000 in 1966-67, a gain of 12 per cent; whereas secondary enrollments increased from 214,000 in 1956-57 to almost 273,000 in 1966-67, an increase of 27 per cent.

Table 8 does not include statistics on enrollment in kindergarten or in special education. Only recently have enrollment data for these areas been included regularly in reports issued by the State Department of Education. Statistics for the past five years indicate

TABLE 8

ENROLLMENT BY GRADE IN OKLAHOMA PUBLIC  
ELEMENTARY AND SECONDARY SCHOOLS,  
1956-57 THROUGH 1966-67

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Total
1956-57	50,653	48,039	48,398	50,308	42,816	39,248	40,952	40,996	39,305	36,479	30,702	25,741	493,637
1957-58	52,240	47,236	46,722	47,076	49,145	42,222	39,101	39,824	40,054	36,738	32,667	26,929	499,954
1958-59	52,367	48,613	46,636	46,106	46,893	48,921	42,566	38,566	39,305	37,705	33,310	28,707	509,695
1959-60	54,286	49,077	47,693	45,667	45,518	46,313	49,254	41,825	37,857	37,049	34,022	29,160	517,721
1960-61	55,152	51,300	48,500	46,995	45,439	45,282	47,018	48,450	41,141	35,648	33,534	30,095	528,554
1961-62	54,912	52,275	50,652	48,210	46,939	45,548	45,972	46,287	47,941	39,262	32,459	29,620	540,077
1962-63	56,300	52,061	51,835	50,373	48,872	46,872	46,106	45,391	46,570	45,944	35,964	29,038	555,326
1963-64	56,365	52,460	50,744	50,736	49,924	47,688	47,566	45,575	45,643	44,923	42,769	32,912	567,305
1964-65	55,647	52,835	51,683	50,439	50,141	49,633	46,553	47,966	45,552	43,710	41,333	38,825	574,317
1965-66	56,392	52,008	51,977	51,025	49,982	50,152	50,260	47,444	46,791	44,206	40,621	38,119	578,977
1966-67	56,550	52,899	51,218	51,283	50,922	49,699	50,836	49,839	47,692	45,701	41,255	37,503	585,397

Source: Statistical Services Division, Oklahoma State Department of Education. Excludes Kindergarten and Special Education.

that these two areas are particularly fast-growing, as set forth in Table 9. For example, special education enrollments increased from approximately 800 in 1962-63 to a total of 3,900 in 1967-68. Meanwhile, kindergarten and pre-kindergarten enrollments increased from approximately 15,000 to more than 24,000.

TABLE 9  
ENROLLMENT IN OKLAHOMA PUBLIC KINDERGARTEN  
AND SPECIAL EDUCATION PROGRAMS,  
1962-63 THROUGH 1967-68

Year	Enrollment	
	Kindergarten and pre-Kindergarten	Special Education
1962-63	15,097	818
1963-64	15,946	1,764
1964-65	20,037	2,546
1965-66	22,969	2,749
1966-67	23,219	3,250
1967-68	24,462	3,921

Sources: Statistics for Special Education enrollments obtained from Biennial Reports of the Oklahoma State Department of Education. Kindergarten enrollments furnished by Statistical Services Division, Oklahoma State Department of Education.

All levels included, enrollments in Oklahoma public schools for the decade 1956-57 to 1966-67 went from approximately 507,000 at the beginning of the decade to 612,000 at the end of the decade, an absolute increase of 105,000 students and a percentage increase of 20

per cent. Assuming a pupil-teacher ratio of 25-to-1, that increase in students should have resulted in an increase of at least 4,200 additional teachers for Oklahoma's public schools between 1957 and 1967. The actual increase for the decade was much greater than that, as set forth in the following paragraphs.

#### Professional Employees of Oklahoma School Districts

An examination of statistics relating to the number of professional employees on the payroll of Oklahoma public school districts reveals that the number of employees has gone up at a rate much higher than the rate of student growth. The total number of professional employees in public school districts increased from 20,683 in 1956-57 to a total of 27,062 in 1966-67, an absolute increase of 6,379, and a percentage increase of 30 per cent. It was previously indicated that the number of students enrolled in public schools went up by 20 per cent during that same decade. As the number of students was increasing by 20 per cent, the number of professional employees increased by 30 per cent. It is not possible to ascertain how many of the professional employees in 1956-57 were classroom teachers and how many were specialized personnel such as counselors, librarians, school nurses, and the like. Only for the past five or six years have detailed and comparable data on professional employees been maintained; therefore, the analyses of data to follow relating to teachers and other professional employees of Oklahoma school districts will be confined to the years 1963-64 through 1967-68.

TABLE 10

TOTAL NUMBER OF PROFESSIONALS LISTED ON PERSONNEL REPORTS OF OKLAHOMA  
PUBLIC SCHOOL DISTRICTS, 1963-64 THROUGH 1967-68  
BY POSITION AND LEVEL

Position and Level	Number of Full-Time Equivalency				
	1963-64	1964-65	1965-66	1966-67	1967-68
Superintendent	547	537	529	525	509
Asst. Supt.	23	25	30	39	39
Adm. Asst.	19	36	34	55	75
Elem. Non-Teach. P.	324	335	347	370	389
Jr. Hi. Non-Teach. P.	112	114	131	108	99
High Sch. Non-Teach. P.	162	170	170	157	165
Asst. Elem. N.-T. P.	6	5	8	18	19
Asst. Jr. Hi. N.-T. P.	7	8	26	49	40
Asst. Sr. Hi. N.-T. P.	12	16	2	51	58
Elem. Teaching P.	912	923	861	789	759
Jr. Hi. Teach. P.	130	133	117	108	97
High Sch. Teach. P.	406	419	413	388	386
Asst. Elem. Teach. P.				23	15
Asst. Jr. Hi. Teach. P.				17	22
Asst. Sr. Hi. Teach. P.				14	20
- Kindergarten Teacher	255	290	326	456	488
Nursery & Head Start				1	26
Elementary Teacher	10,333	10,571	11,012	11,576	11,868
Jr. High Teacher	3,152	3,355	3,577	3,845	4,002
High School Teacher	6,253	6,368	6,581	5,752	6,026
Hi. Sch. Voc. Agri.				382	380
Hi. Sch. Voc. Home Ec.				339	310
Hi. Sch., Other Voc.				387	399
Supvr. or Consultant	94	123	152	172	182
Counselor	233	232	276	383	421
Librarian	215	222	204	280	293
Nurse	79	81	97	119	122
Census & Attend. Supvr.	11	13	10	8	9
Television Teacher	22	17	14	16	18
Psychologist	13	13	16	16	20
Visiting Teacher	25	14	6	18	5
Special Ed. Teacher	311	355	437	454	631
Municipal Jr. College				18	14
Adult Education				2	19
Man Power & Development				4	15
Area Voc. Schools					33
Other Federal Programs				123	6
Television Director			4		
Activity Director		1			
Central Office Admin.	31	1			
Total	23,687	24,377	25,380	27,062	27,979

Source: Annual reports compiled by Finance Division, Oklahoma State Department of Education.

Table 10 presents a five-year picture of professional employees in Oklahoma public school districts by category of assignment and by level. It will be seen that the total number of employees (full-time equivalency) went up from 23,687 in 1963-64 to a figure of 27,979 in 1967-68. During that period, 4,292 employees were added to the school districts, an increase of 18 per cent. Over the same period, the number of students increased by 34,665, a percentage gain of only 6 per cent. Obviously the increase in total employees was three times that of students. But how many of the increased number of employees were hired as classroom teachers and how many as administrators and specialized personnel? The data as displayed in Table 10 do not answer that question; therefore it is necessary to combine certain of the categories to effect a separation of classroom teachers and non-teaching personnel in order that a more detailed analysis can be made.

#### Growth in Number of Teachers

In Table 11, the forty categories in Table 10 have been reduced to four major categories: Administrators; Elementary teachers; Secondary teachers; and Specialized Personnel. The category of Elementary teachers has been subdivided into Regular classroom teachers, Special Education, and Kindergarten teacher. Specialized Personnel has been subdivided into Counselors, Librarians, Nurses, Supervisors, and Other Specialized Personnel. In categorizing teachers and non-teachers, an attempt was made to classify all those who spent one-half time or more in the classroom as teachers, and to classify those who spent less than one-half time in the classroom as Administration or Specialized



TABLE 11

NUMBER OF PROFESSIONAL EMPLOYEES IN OKLAHOMA PUBLIC  
ELEMENTARY AND SECONDARY SCHOOLS, 1963-64  
THROUGH 1967-68, BY CATEGORY AND LEVEL

Category or Level	1963-64	1964-65	1965-66	1966-67	1967-68
Administration	1,212	1,246	1,277	1,372	1,393
Elementary:					
Regular	11,245	11,494	11,873	12,388	12,642
Kindergarten and Pre-Kindergarten	255	290	326	457	514
Special Education	311	355	437	454	631
Total Elementary	11,811	12,139	12,636	13,299	13,787
Secondary	9,941	10,275	10,688	11,232	11,642
Specialized Personnel					
Counselors	233	232	276	383	421
Librarians	215	222	204	280	293
Nurses	79	81	97	119	122
Supervisors	94	123	152	172	182
Other Specialized	102	59	50	205	139
Total Specialized	723	717	779	1,159	1,157
Grand Total	23,687	24,377	25,380	27,062	27,979

Personnel. For purposes of this analysis, junior high school teachers were classified as Secondary.

In general, Table 11 reveals that non-teaching categories of employment grew faster than did the number of teachers from 1963-64 through 1967-68, although the number of secondary teachers increased by 17.1 per cent and the number of elementary teachers by 12.4 per cent. Both special education teachers and kindergarten teachers

increased by more than 100 per cent during those same five years, and increases at other levels were almost as high, including the following: counselors, up 80.7 per cent; librarians, up 36.3 per cent; school nurses, up 54.4 per cent; supervisors and consultants, up 93.6 per cent; and other specialized personnel, up 36.3 per cent. The number of administrators grew by 14.9 per cent over the same period. In summary, Table 11 reveals that although the number of classroom teachers went up by considerably more over the past five years than did student enrollment, the greatest relative gains in professional employment were made by non-teaching categories, with the exception of the areas of special education and kindergarten.

TABLE 12

STUDENT ENROLLMENT IN OKLAHOMA PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, BY LEVEL, 1963-64 THROUGH 1967-68

Year	Elementary <sup>a</sup>	Secondary <sup>b</sup>	Kindergarten and Pre-K.	Special Education	Total
1963-64	307,917	259,388	15,946	1,764	585,015
1964-65	310,378	263,939	20,037	2,546	596,900
1965-66	311,536	267,441	22,969	2,749	604,695
1966-67	312,571	272,826	23,219	3,250	611,866
1967-68	313,203	278,094	24,462	3,921	619,680

<sup>a</sup>Grades 1 through 6.

<sup>b</sup>Grades 7 through 12.

Pupil-Teacher Ratios in Public Schools

The number of teachers and other personnel employed by Oklahoma public schools over the past five years was presented in the

table on page 76. Table 12 sets forth the student enrollment in Oklahoma public schools for the same five-year period, by category and level.

When the number of teachers as presented in Table 11 is divided into the student enrollment figures presented in Table 12, the result is a ratio of pupils to teachers for each of the categories of enrollment set forth in the two tables. The following table was derived in the manner described.

TABLE 13  
NUMBER OF PUPILS PER TEACHER IN OKLAHOMA PUBLIC  
ELEMENTARY AND SECONDARY CLASSROOMS,  
BY LEVEL, 1963-64 THROUGH 1967-68

Year	Elementary	Secondary	Kindergarten & Pre-Kgn.	Special Education	Average Pupils Per Teacher	Average Pupils Per Professional Employee
1963-64	27.4	26.1	62.5	5.7	26.9	24.7
1964-65	27.0	25.7	69.1	7.2	26.6	24.5
1965-66	26.2	25.0	70.0	6.3	25.9	23.8
1966-67	25.2	24.3	50.8	7.2	24.9	22.6
1967-68	24.8	23.9	47.6	6.2	24.4	22.1

It will be observed from the table above that the average number of pupils per classroom teacher in Oklahoma public schools dropped from 26.9 in 1963-64 to 24.4 in 1967-68, while the number of pupils per professional employee--including teachers, administrators, and specialized personnel--went down from 24.7 in 1963-64 to a figure of 22.1 in 1967-68. Thus the average classroom teacher in 1967-68 had

2.5 fewer students than did his cohort five years earlier. It is significant to note that this reduction was achieved in the face of a moderate increase in the number of students during the period analyzed. The most dramatic decrease in the number of students per teacher took place at the kindergarten level, where the average pupil load went down from 62.5 in 1963-64 to 47.6 in 1967-68. It should be pointed out that in a great majority of cases, a kindergarten teacher meets two sections per day: one in the morning and one in the afternoon. Therefore the number of pupils per kindergarten teacher should normally be divided by two to ascertain the average number of pupils in the classroom at any given time.

#### Projections of Future Demand for Teachers

A review of historical enrollment and teacher utilization trends in Oklahoma public schools has laid the foundation for a projection of future enrollments, which in turn will help to determine the number of teachers to be needed over the years ahead. Most of the pupils who will be enrolled in public schools over the next decade are already on the scene: some are currently enrolled in school in the lower grades, while many others have already been recorded as live births and can be expected to make their appearance into the public schools on schedule. Some few of those expected to be enrolled in the lower grades in the latter portion of the ten years ahead have not yet been born, and therefore are somewhat of an unknown quantity. However, the application of current birth-rate statistics to the number of women in the child-bearing ages can be expected to yield reasonably useful

data with regard to the anticipated number of births for the years 1969 through 1972, those years for which projections of births will be necessary.

Given the number of births in a series of years, it is a relatively simple matter to arrive at the projected number of first-grade pupils for a series of years into the future. This is done through the use of historical ratios arrived at by dividing the number of live births into the number of first-grade pupils six years later. Once a given group of students has been "projected" into the first grade, it is then a relatively simple procedure to "survive" that group from one grade to the next, again using historical survival ratios. Using this method, called the "Cohort-Survival" method of projection, the researcher is enabled to make relatively accurate estimates of enrollments for as much as ten years into the future.

#### Number of Births and First-Grade Enrollment

The table following presents the number of births in Oklahoma over the five-year period 1957-1961, together with first-grade enrollments in Oklahoma public schools six years later.

It can be seen from Table 14 that the number of births between 1957 and 1961 in Oklahoma was relatively stable, and that the number of first-grade pupils in Oklahoma public schools six years later was consistently 110 per cent of the number of births for the matching year. There are two possible explanations for this apparent discrepancy: the first is the possibility of growth in the pre-school population due to immigration; the second can be explained thusly: each

TABLE 14

NUMBER OF BIRTHS IN OKLAHOMA, 1957-1961, AND FIRST-GRADE  
ENROLLMENT IN OKLAHOMA PUBLIC SCHOOLS, 1963-1967

Year	Number of Births	First-Grade Enrollment	Year	Ratio: First-Grade Enrollment to Births
1957	51,349	56,365	1963	109.8
1958	50,552	55,647	1964	110.1
1959	51,141	56,392	1965	110.3
1960	50,900	56,550	1966	111.1
1961	50,859	56,292	1967	110.7

year, approximately 100 per cent of the age-group born six years earlier enters the first grade; and these youngsters are joined by a group of other youngsters who entered first grade the previous year, but who were retained in first grade for one reason or another. This always guarantees that the first-grade class in a given school system or state will be larger than the number of births six years earlier, given a stable migration pattern.

Even though the ratio between first-graders and births six years earlier has been consistently greater than 100 per cent, it does not follow that the ratio between kindergarten students and the number of births five years earlier should be expected to follow the same pattern. For purposes of the projections to be made later in this chapter, it has been assumed that enrollment in kindergarten will not exceed 100 per cent of the number of births five years earlier. Historically, most public school systems in Oklahoma have not operated public kindergartens, since the state has not heretofore reimbursed

school districts for the cost of these programs. However, the Oklahoma Legislature in the spring of 1969 provided for state assistance to school districts engaged in kindergarten. It has therefore been assumed for projection purposes that all school districts in Oklahoma will be offering a public kindergarten program by the school year 1970-71.

Table 15 will present actual birth data in Oklahoma for the years 1962 through 1967, together with the estimated number of births in 1968, and projections for the years 1969 through 1972. In addition, the table is designed to show projected enrollments at both kindergarten and first-grade levels through the year 1977-78, based on relationships between births and projected enrollments five and six years later.

As the table indicates, the drop in the number of births in Oklahoma from more than 50,000 in 1962 to approximately 40,000 in 1967 forecasts a similar drop in first-grade enrollments over the next few years. For example, first grade enrollments will decline from approximately 55,000 in 1968 to about 46,700 in 1977, assuming that present relationships hold between number of births and enrollments in first grade six years later. Kindergarten enrollments can of course be expected to go up sharply as school districts in Oklahoma move to establish new programs. By the fall of 1970, it is expected that more than 43,000 pupils will be enrolled at the kindergarten level in public programs.

TABLE 15

NUMBER OF BIRTHS IN OKLAHOMA, 1962 THROUGH 1967 ACTUAL, WITH PROJECTIONS TO 1972; AND PROJECTIONS OF KINDERGARTEN AND FIRST-GRADE ENROLLMENTS IN OKLAHOMA PUBLIC SCHOOLS THROUGH 1977-78

Year	Births	Year	Pre-Kindergarten and Kindergarten Enrollment	Year	First-Grade Enrollment
1962	50,172	1967	24,462	1968	55,190
1963	48,805	1968	25,940	1969	53,685
1964	46,348	1969	29,750	1970	50,985
1965	41,641	1970	43,640	1971	45,805
1966	38,885	1971	41,160	1972	42,775
1967	40,103	1972	42,400	1973	44,110
1968	40,500	1973	42,820	1974	45,100
1969	41,500	1974	43,120	1975	45,650
1970	42,000	1975	43,830	1976	46,200
1971	42,500	1976	44,400	1977	46,750
1972	43,000	1977	45,100		

Sources and Assumptions: Number of births from 1962 through 1967, Oklahoma Data Book 1968, University of Oklahoma Bureau of Business Research. Birth data for 1968 estimated on basis of first ten months' figures compiled by the Oklahoma State Department of Public Health. Kindergarten enrollment statistics from Statistical Services Division, Oklahoma State Department of Education. Projection of kindergarten and pre-kindergarten students based on the assumption that enrollments at the kindergarten level will equal 100 per cent of births five years earlier, plus a small annual increase factor for enrollment at the pre-kindergarten level. Projection of first-grade enrollments based on the assumption that the number of pupils will be equal to 110 per cent of births six years earlier.

#### Enrollment Projections for Grades 1-12

To this point, projections for kindergarten and first grade have been made through the year 1977-78. Next, first-grade enroll-



ments for the years projected will be "survived" through succeeding years and grades until projections have been accomplished for all grade levels for the years 1967-68 through 1977-78. That series of projections has been included in this chapter as Table 16. It will be noted that total enrollment in grades 1 through 12 is expected to decline steadily from approximately 590,000 to below 530,000 in 1977-78. The bulk of the decrease is projected to come in grades 1 through 6, where total enrollment should decline from approximately 313,000 in 1967 to about 262,000 in 1977. During the same decade, secondary enrollments should go up from the 1967 enrollment of 278,000 to a high of 292,000 in 1973, then decline once more to a 1977 figure of 276,000.

#### Projection of Special Education Enrollments

Over the past five years, the number of pupils enrolled in special education has risen from 1,764 in 1963-64 to a total of 3,921 in 1967-68. Historically, special education enrollments have been compiled separately from other enrollment figures; therefore, a separate projection of pupils for the area of special education will be made in this study. Table 17 suggests that the number of pupils to be enrolled in that category will double over the next decade, based on trends established in recent years. Provided that additional funds are made available, and that sufficient teachers are forthcoming, enrollments could go higher than those projected here.

TABLE 16

ENROLLMENT BY GRADE IN OKLAHOMA PUBLIC ELEMENTARY AND SECONDARY SCHOOLS,  
1967-68 ACTUAL, WITH PROJECTIONS THROUGH 1976-77

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Total
1967-68	56,292	52,860	51,961	50,581	50,724	50,785	50,419	50,373	49,871	46,659	42,683	38,089	591,297
1968-69	55,190	52,712	51,993	51,291	50,257	50,511	51,496	49,980	50,519	48,754	43,566	39,413	595,682
1969-70	53,685	51,658	51,816	51,338	50,850	50,086	51,233	51,038	50,075	49,413	45,536	40,233	596,961
1970-71	50,985	50,276	50,806	51,158	50,953	50,657	50,797	50,782	51,166	48,983	46,616	42,057	595,236
1971-72	45,805	47,773	49,472	50,166	50,749	50,770	51,381	50,350	50,899	50,056	45,770	43,059	586,250
1972-73	42,775	42,942	47,018	48,854	49,765	50,561	51,496	50,929	50,476	49,800	46,782	42,282	573,680
1973-74	44,110	40,123	42,272	46,435	48,488	49,590	51,284	51,043	51,056	49,391	46,553	43,222	563,567
1974-75	45,100	41,397	39,505	41,752	46,110	48,343	50,284	50,833	51,176	49,996	46,181	43,015	553,692
1975-76	45,650	42,349	40,768	39,023	41,481	45,972	49,020	49,857	50,970	50,086	46,756	42,676	544,608
1976-77	46,200	42,888	41,714	40,275	38,789	41,357	46,616	48,628	50,006	49,889	46,850	43,212	536,424
1977-78	46,750	43,428	42,245	41,213	40,053	38,673	41,936	46,266	48,774	48,956	46,676	43,303	528,273

Source and assumptions: Enrollment data for the 1967-68 school year were obtained from the Statistical Services Division, Oklahoma State Department of Education. Excludes kindergarten and special education. The projection of enrollment by grade in Oklahoma public schools from 1968-69 through 1977-78 is based on the following assumptions: (1) The number of births in Oklahoma will rise from a total of 40,103 in 1967 to approximately 43,000 in 1972; (2) The ratio of births to first-grade enrollments will continue at 110.0 through 1977-78; and (3) The retention of pupils in grades 2 through 12 will continue to improve slightly from year to year between 1968-69 through 1977-78, based on ratios obtaining in those grades for the years 1965-66 through 1967-68.

TABLE 17

PROJECTION OF SPECIAL EDUCATION STUDENTS FOR OKLAHOMA PUBLIC  
ELEMENTARY AND SECONDARY SCHOOLS, 1967-68 THROUGH 1977-78

Year	Pupils
1967-68	3,921
1968-69	4,400
1969-70	4,900
1970-71	5,400
1971-72	5,900
1972-73	6,400
1973-74	6,900
1974-75	7,400
1975-76	7,900
1976-77	8,400
1977-78	8,900

Summary of Enrollment Projections

Projections of enrollment at every grade level and in every specialized category have been completed for the decade 1967-68 through 1977-78. Table 18 summarizes these projections by major category: Elementary, grades 1 through 6; Secondary, grades 7 through 12; Special Education; and Kindergarten and pre-Kindergarten.

Projection of Total Teachers Needed, 1967-1977

Previous sections of this chapter have treated historical enrollments and pupil-teacher ratios in Oklahoma public schools, as well as projected enrollments for the decade ahead. This section will be devoted to a projection of the total number of teachers needed each year for the number of students which have been projected. In projecting the need for teachers, it was necessary to arrive at a reasonable set of assumptions with regard to pupil-teacher ratios,

TABLE 18

SUMMARY OF ENROLLMENT PROJECTIONS FOR OKLAHOMA PUBLIC SCHOOLS,  
1968-69 THROUGH 1977-78, BY CATEGORY AND LEVEL

	Elementary <sup>a</sup>	Secondary <sup>b</sup>	Kindergarten and Pre-Kgn.	Special Education	Total
1967-68	313,203	278,094	24,462	3,921	619,680
1968-69	311,954	283,728	25,940	4,400	626,022
1969-70	309,433	287,528	29,750	4,900	631,611
1970-71	304,835	290,401	43,640	5,400	644,276
1971-72	294,735	291,515	41,160	5,900	633,310
1972-73	281,915	291,765	42,400	6,400	622,480
1973-74	271,018	292,549	42,820	6,900	613,287
1974-75	262,207	291,485	43,120	7,400	604,212
1975-76	255,243	289,365	43,830	7,900	596,338
1976-77	251,223	285,201	44,400	8,400	589,224
1977-78	252,362	275,911	45,100	8,900	582,273

<sup>a</sup>Grades 1 through 6.

<sup>b</sup>Grades 7 through 12.

particularly in connection with ratios for elementary and secondary teachers. One possible assumption would have been to assume that student-teacher ratios would remain constant at the 1967-68 level. A second possibility would have been to assume that ratios would continue to decrease over the next ten years at the same rate as over the past ten. A third possibility, and one which was adopted as the basis for the projections which follow, was that pupil-teacher ratios would continue to decrease, but at a decreasing rate.

At the elementary level, it was assumed that the number of pupils per teacher would decline from a 1967 figure of 24.8 to a minimum of 22.0 by the end of the projection period. In like manner, it was assumed that the number of pupils per teacher at the secondary level would reach a minimum of 22.0 in 1977, as compared with a figure of 23.9 in 1967. At the kindergarten level, it was assumed that the number of pupils-per-teacher would decline from 47.6 in 1967 to a minimum of 40.0 by 1977. The figure for special education was continued at a rate of 6-to-1 throughout the period projected. The number of pupils per teacher projected for each level and each major category for the years 1967-68 through 1977-78 is set forth in Table 19.

By dividing the pupil-teacher ratios set out in Table 19 into the enrollment projections previously presented in this chapter, the number of classroom teachers to be needed each year between now and 1977-78 was arrived at, as set out in Table 20.

It will be observed that the total demand for classroom teachers in the years ahead has been projected to move upward from a 1967-68 figure of 25,429 by approximately 2,000 teachers, reaching a high of 27,406 by 1972-73. After that time, a projected decrease in students will probably allow for some reduction in the teaching force. That reduction can probably be accomplished through natural attrition and retirement in most school districts, particularly if school administrators begin planning for its accomplishment.

At the elementary level, the projected picture is for a reduction in the teacher force starting in 1973-74, after the pupil-teacher

TABLE 19

PUPIL-TEACHER RATIOS PROJECTED FOR OKLAHOMA PUBLIC ELEMENTARY  
AND SECONDARY SCHOOLS, 1968-69 THROUGH 1977-78, BY LEVEL

Year	Elementary	Secondary	Kindergarten and Pre-Kgn.	Special Education	Average Pupils Per Teacher	Average Pupils Per Total Employee
1967-68	24.8	23.9	47.6	6.2	24.4	22.1
1968-69	24.6	23.7	48.0	6.0	24.1	21.9
1969-70	24.4	23.5	50.0	6.0	24.0	21.7
1970-71	24.0	23.3	52.0	6.0	24.0	21.6
1971-72	23.2	23.1	47.9	6.0	23.3	21.0
1972-73	22.2	22.9	46.1	6.0	22.7	20.4
1973-74	22.0	22.7	43.9	6.0	22.4	20.0
1974-75	22.0	22.5	42.1	6.0	22.3	19.8
1975-76	22.0	22.3	41.9	6.0	22.1	19.6
1976-77	22.0	22.1	40.0	6.0	22.0	19.3
1977-78	22.0	22.0	40.1	6.0	21.9	19.1

TABLE 20

DEMAND FOR CLASSROOM TEACHERS IN OKLAHOMA ELEMENTARY  
AND SECONDARY PUBLIC SCHOOLS, 1967-68 ACTUAL,  
WITH PROJECTED DEMAND THROUGH 1977-78

Year	Number of Teachers				
	Elementary	Secondary	Kindergarten and Pre-Kgn.	Special Education	Total Classroom Teachers
1967-68	12,642	11,642	514	631	25,429
1968-69	12,681	11,972	540	733	25,926
1969-70	12,681 <sup>a</sup>	12,235	595	816	26,327
1970-71	12,681 <sup>a</sup>	12,465	840	900	26,886
1971-72	12,681 <sup>a</sup>	12,620	860	983	27,144
1972-73	12,681 <sup>a</sup>	12,740	920	1,066	27,407
1973-74	12,320	12,890	975	1,150	27,335
1974-75	11,920	12,955	1,025	1,233	27,133
1975-76	11,600	12,976	1,045	1,316	26,937
1976-77	11,420	12,905	1,110	1,400	26,835
1977-78	11,470	12,540 <sup>b</sup>	1,125	1,485	26,620

<sup>a</sup>The assumption has been made that there will be no reduction in the elementary teaching force until student-teacher ratios reach 22-1. After that time (1973-74), it has been assumed that the ratio will be maintained at 22-1.

<sup>b</sup>It has been assumed that student-teacher ratios at the secondary level will be reduced from 23.7-to-1 in 1968-69 to a ratio of 22-1 in 1977-78.

ratio has been lowered to about 22-to-1. The ten-year picture (as projected) calls for a reduction of approximately 1,200 teachers at the elementary level. Provided that no reduction in the teacher force takes place between now and then, the pupil-teacher ratio will plunge

below 20-to-1. That situation could conceivably occur, but has not been projected to take place for a variety of reasons. Before all of the funds expected to be available to public education are spent toward a reduction of the pupil-teacher ratio, it would seem the better part of planning to devise alternative ways of utilizing these resources, perhaps through the utilization of sub-professional personnel such as teacher aides, or the purchase of technological devices such as teaching machines and equipment. Provided that the teaching profession moves in the same direction as have other professions such as dentistry and medicine, there will be a trend away from proliferating the number of professional personnel and toward the utilization of para-professionals in the performance of sub-professional tasks.

The projected need for secondary teachers over the next decade is upward, starting from 11,642 in 1967-68, reaching an intermediate high of about 13,000 in 1975-76, then settling to a projected 12,540 in 1977-78. At the end of the decade, the number of secondary students (grades 7-12) will exceed the number of elementary students by about 20,000.

At the kindergarten and special education levels, the outlook over the next decade is for a doubling of enrollments and teachers in both areas. As the State of Oklahoma provides matching funds for mounting new kindergarten programs at the district level, it is inevitable that all youngsters in the five-year old group will be enrolled in the near future. In the category of special education, the increasing of enrollment is but a matter of providing additional classrooms



and additional teachers, both of which should be available in greater numbers over the next decade.

#### Projection of Administrators and Specialized Personnel

The need for administrators and other non-teaching personnel has been projected separately for the next decade, in order that meaningful relationships might be drawn between numbers of students and classroom teachers. This is not to suggest that personnel such as counselors, supervisors, librarians, or school nurses are not teachers, but rather to point out that pupil-teacher ratios are meaningless unless they are computed on the basis of face-to-face contacts between teachers and pupils. It is of little comfort to a classroom teacher who has 35 students in a secondary classroom to know that the overall ratio of pupils to professionals at the high school level is on the order of 20-to-1, provided that a reduction in student load is not forthcoming. Therefore, specialized personnel as projected in the following pages are not being counted against the pupil-teacher ratios as projected previously.

The following table sets forth the projected need for administrators and other specialized personnel for the years 1967-68 through 1977-78. A comparison of the projected growth in the number of administrators and other non-teaching personnel with the projected growth in classroom teachers reveals that whereas the former is expected to increase by only about 5 per cent, the latter category is projected to increase by 50 per cent. This anomaly occurred because of two factors: whereas the number of students enrolled bears a direct relationship to

TABLE 21

DEMAND FOR ADMINISTRATORS AND OTHER NON-TEACHING PERSONNEL IN  
OKLAHOMA PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, 1967-68  
ACTUAL, WITH PROJECTED DEMAND THROUGH 1977-78

Year	Administrators	Specialized Personnel						Total Administrators and Specialized Personnel
		Counselors	Librarians	Nurses	Supervisors	Other	Total Specialized Personnel	
1967-68	1,393	421	293	122	182	139	1,157	2,550
1968-69	1,420	453	313	130	190	150	1,236	2,656
1969-70	1,448	500	333	135	200	175	1,343	2,791
1970-71	1,477	528	353	140	210	200	1,431	2,908
1971-72	1,507	555	373	145	220	225	1,518	3,025
1972-73	1,537	584	393	150	230	250	1,607	3,144
1973-74	1,568	616	413	160	240	275	1,704	3,272
1974-75	1,599	640	433	170	250	300	1,793	3,392
1975-76	1,631	681	453	180	260	325	1,899	3,530
1976-77	1,663	713	473	190	270	350	1,996	3,659
1977-78	1,696	790	493	200	280	375	2,138	3,834

the number of teachers needed, that same factor might not always be true with respect to specialized personnel (the need for librarians, for example, might bear a greater relationship to number of books housed than to number of students enrolled); the second factor which created a greater relative need for non-teaching personnel was the acknowledged current shortage of specialized personnel such as counselors and school nurses. The recommended ratio of students to coun-

selors at the secondary level is currently on the order of 300-to-1. The ratio which currently obtains in Oklahoma secondary schools is 660-to-1. The number of counselors being projected for 1977-78 would bring the ratio down to a level of 350-to-1--not an optimum, but a reasonable figure.

It will be noted that the category of "Other Specialized" personnel has been projected to rise from 139 to a total of 375 by the end of the period projected. That percentage of increase is greater than the increase projected for any other non-teaching category, in order to anticipate the need for specialized personnel to fill positions not yet created, an example of which might be in the area of supervision of technological equipment. Projections in other areas have been made on the basis of historical enrollment trends.

#### Summary of Projected Demand for Professional Personnel, 1967-77

The following table summarizes the total demand for professional personnel projected to be needed by Oklahoma public elementary and secondary schools over the next decade, by four major categories. Breakdowns within major category have previously been presented.

It will be observed that the total number of professional personnel projected for the elementary and secondary sector of public education over the next decade goes from a beginning point of 27,979 in 1967-68 to an intermediate high of 30,607 in 1973-74, then down to 30,454 by the end of the period. The overall need is projected to increase on the order of 2,500, a much smaller increase than was re-

corded over the decade 1957-67, during which time approximately 6,400 professionals were added to school district payrolls.

TABLE 22

DEMAND FOR PROFESSIONAL PERSONNEL IN OKLAHOMA PUBLIC ELEMENTARY  
AND SECONDARY SCHOOLS, 1967-68 ACTUAL, WITH PROJECTIONS  
THROUGH 1977-78

Year	Number of Personnel Needed				
	Elementary <sup>a</sup>	Secondary	Administrators	Specialized	Total
1967-68	13,787	11,642	1,393	1,157	27,979
1968-69	13,954	11,972	1,420	1,236	28,582
1969-70	14,092	12,235	1,448	1,343	29,118
1970-71	14,421	12,465	1,477	1,431	29,794
1971-72	14,524	12,620	1,507	1,518	30,169
1972-73	14,667	12,740	1,537	1,607	30,551
1973-74	14,445	12,890	1,568	1,704	30,607
1974-75	14,178	12,955	1,599	1,793	30,525
1975-76	13,961	12,976	1,631	1,899	30,467
1976-77	13,930	12,905	1,663	1,996	30,494
1977-78	14,080	12,540	1,696	2,138	30,454

<sup>a</sup>Contains kindergarten and special education.

Summarizing the overall manpower outlook for the decade 1967-1977, it would appear almost certain that the demand for trained professionals for public elementary and secondary education will rise during that period by only about 10 per cent over current levels, which increase will be substantially less than the increase for the previous decade, during which period the number of professionals on

public school payrolls went up by some 30 per cent. It should be emphasized that during the previous decade, there was an increase in the number of public school students on the order of 100,000, or 20 per cent, whereas for the decade ahead there is projected a decrease of 40,000 or more students. Therefore, the projected increases in professional staff for the decade ahead will be almost solely for the purpose of reducing pupil-teacher ratios, with the exception of some specialized personnel who will need to be added to bolster up areas such as counseling programs, libraries, and the like.

A word of caution is necessary in the interpretation and use of these manpower data. The manpower projections made in this chapter are based on projected student enrollments, which projections may not materialize exactly as set forth here. The number of births could rise sharply over the next three years, which would affect the number of elementary students in the latter part of the next decade; or, the retention rate at the secondary level could improve at a rate greater than anticipated. The rate of in-migration might increase sharply, moving more students into the population pool. All of these could affect the projection of school population. In addition, it should be pointed out that the number of teachers projected for the decade ahead was predicated upon certain assumptions with regard to anticipated pupil-teacher ratios. In the event that school districts operate at pupil-teacher ratios greater or lesser than the ratios used here, for example, there will be deviations from the anticipated manpower needs presented.

Demand for Personnel Created by Teacher Turnover

Previous portions of this chapter contain projections of total manpower needs for the decade ahead in elementary and secondary education. Those projections indicated that the demand for additional teachers probably would be relatively smaller than in the previous decade. For example, between 1963-64 and the current year, the public schools hired an additional 1,000 professionals each year over the year previous, including both teachers and specialized personnel. Projected needs show that over the next five years, Oklahoma schools will hire approximately 470 additional professionals each year over the year previous. Following 1972-73, no additional personnel needs are anticipated. Thus the anticipated needs for additional personnel in the decade to come are less than one-half those of the previous decade.

The greatest demands for future manpower will come not because of pupil growth, but because of teacher turnover. Each year in Oklahoma, approximately one professional in five terminates his position with the school district in which he has been employed. For a number of years, the Oklahoma State Department of Education has compiled an annual report of all such terminations, seeking to ascertain how much teacher turnover exists and the reasons for such turnover. Table 23 presents this data for the years 1962-63 through 1966-67.

Table 23 indicates that the number of reported terminations on the part of teachers went up substantially from 1962-63 to 1966-67, moving from 3,308 terminations to a total of 5,645, an absolute increase of 2,337 and a percentage increase of 70.6 per cent.

TABLE 23

NUMBER OF PROFESSIONAL EMPLOYEES OF OKLAHOMA SCHOOL DISTRICTS WHO  
TERMINATED THEIR EMPLOYMENT, AND REASONS GIVEN BY EMPLOYERS  
FOR TERMINATIONS, 1962-63 THROUGH 1966-67

Reason for Termination	62-63	63-64	64-65	65-66	66-67
Retiring	340	339	376	494	521
To Teach At Another School	1,100	1,102	1,254	1,644	1,577
To Teach Out Of State	429	433	523	514	658
For Other Employment	244	245	347	382	361
For Health Reasons	169	173	288	360	363
Marriage	77	76	103	73	113
Other Reasons	698	699	826	1,019	1,284
Deceased	27	32	55	59	71
No Reason Given	224	226	357	644	697
<b>Total</b>	<b>3,308</b>	<b>3,325</b>	<b>4,129</b>	<b>5,189</b>	<b>5,645</b>

Source: Statistical Services Division, Oklahoma State Department of Education.

Among the reasons cited by administrators as causes for teacher termination, the one most frequently reported was "To Teach At Another School In Oklahoma." More than twice as many resignations in 1966-67 occurred among teachers leaving one Oklahoma school to go to another district (1,577), as among those leaving to go out of state (658). These data do not, however, reflect the out-of-state migration which takes place prior to initial employment in Oklahoma. The second most frequently cited reason for teacher turnover was the category of "Other Reasons" followed by "No Reason Given." Following in order were the categories of "To Teach Out Of State," "Retiring," and "For

Health Reasons." An interesting sidelight of these data is the fact that few teachers seem to die in office. Only 71 teachers were reported in the category of "Deceased" in 1966-67. Thus only about one school district in seven saw the death of an active teacher in that year.

When the number of terminations over the five-year reporting period is divided by total number of professionals employed for those years, the following percentage table is created.

TABLE 24

PERCENTAGE OF PROFESSIONAL EMPLOYEES OF OKLAHOMA SCHOOL DISTRICTS WHO TERMINATED THEIR EMPLOYMENT, AND REASONS GIVEN BY EMPLOYERS FOR TERMINATIONS, 1962-63 THROUGH 1966-67

Reason for Termination	62-63	63-64	64-65	65-66	66-67
Retiring	1.48	1.43	1.54	1.95	1.93
To Teach At Another School	4.78	4.66	5.14	6.48	5.83
To Teach Out Of State	1.86	1.83	2.15	2.03	2.43
For Other Employment	1.06	1.04	1.42	1.51	1.33
For Health Reasons	0.73	0.73	1.18	1.42	1.34
Marriage	0.33	0.32	0.42	0.29	0.42
Other Reasons	3.03	2.96	3.39	4.01	4.74
Deceased	0.12	0.14	0.23	0.23	0.26
No Reason Given	0.97	0.96	1.46	2.54	2.58
Total Per Cent	14.36	14.07	16.93	20.46	20.86

Source: Statistical Services Division, Oklahoma State Department of Education.

The percentage table above reveals that in the most recent year for which statistics were available, one Oklahoma teacher in



five terminated his employment with the school district in which he was teaching. Five years earlier, the turnover rate had been one teacher in seven. It is clear that a greater percentage of the teaching force is turning over each year, and the data show that there is no single overriding cause for such turnover. Instead, every category of "Reason for Termination" went up over the five-year reporting period. The percentage of those retiring went up from 1.48 per cent of the teaching force to 1.93 per cent; those resigning to teach at another school district in Oklahoma increased from 4.78 per cent to 5.83 per cent; and those planning to go out-of-state to teach went up from 1.86 per cent to 2.43 per cent of the total teaching force. There was little relative change in the percentage of those resigning for other kinds of employment, or in resignations because of marriage; instead, the greatest percentage changes occurred in the categories of "Other Reasons," and "No Reason Given." The percentage of those two categories combined went up from 4 per cent of the total teaching force to 7.32 per cent, a substantial increase in comparison with the other categories.

These percentage data on teacher turnover indicate that school districts are finding it necessary to devote more and more time to the recruitment and indoctrination of new teachers. Also, they indicate that teachers are becoming more mobile each year, and perhaps more dissatisfied with the status quo. There is also some indication that there may be a greater desire for privacy on the part of those in the profession, since the categories of "Other Reasons" and "No Reason

Given" went up at a considerably greater rate than most other categories inventoried. The fact remains that for whatever reason or reasons, there is a rate of turnover among Oklahoma teachers equivalent to a complete change of personnel every five years, and which if continued over a period of time, would threaten the stability of the educational program in the public schools.

#### Projection of Gross Turnover Among Professional Personnel

Past experience would indicate that the rate of turnover among professional employees of public school districts will continue to increase from year-to-year over the next few years. In 1965-66, the gross turnover rate was 20.46 per cent of the total professional employees of school districts. In 1966-67, the rate rose to 20.86 per cent of the total force.

For purposes of projecting future turnover, the assumption has been made that the rate of increase between 1965-66 and 1966-67 (.40 per cent) will continue over the next five years, after which time the rate is expected to stabilize for the remainder of the projection period. When the termination rates as described above are multiplied by the projected number of professional employees for each year in the decade 1967-1977, the gross turnover for those years is the product of the calculation, as set forth in Table 25.

#### Calculation of Gross Demand for New Employees, 1967-1977

Table 25 is designed to show the projected amount of turnover among professional employees of Oklahoma school districts for the decade ahead. Provided that those projections are reasonably accurate,

TABLE 25

PROJECTED GROSS TURNOVER OF PROFESSIONAL EMPLOYEES,  
OKLAHOMA PUBLIC SCHOOL DISTRICTS,  
1967-68 THROUGH 1977-78

Year	Total Professional Employees	Termination Rate	Gross Amount of Turnover
1967-68	27,979	21.26	5,950
1968-69	28,582	21.66	6,190
1969-70	29,118	22.06	6,425
1970-71	29,794	22.46	6,690
1971-72	30,169	22.86	6,900
1972-73	30,551	23.26	7,105
1973-74	30,607	23.26	7,120
1974-75	30,525	23.26	7,100
1975-76	30,467	23.26	7,085
1976-77	30,494	23.26	7,090
1977-78	30,454	23.26	7,085

Assumptions: The assumption has been made that the termination rate in existence for the 1966-67 school year (20.86) will increase by .40 per cent each year for the next five years, following which the rate will stabilize for the remainder of the projection period.

administrators will need to hire each year the number of employees listed under the category "Gross Amount of Turnover." That number of employees will be needed as replacements for employees lost to other Oklahoma districts and to districts in other states, or to replace those lost through death, retirement, marriage, and the like. An additional number of employees will be needed to take care of expected pupil growth, and/or to add new personnel for specialized functions.

When these latter needs are added to those set forth in Table 25, the result is the projected gross demand for new professional employees in Oklahoma public schools over the next decade, as shown in the following table. In this context, the word "new" refers to all employees who were not teaching in the district the previous year. It includes those necessary to fill vacancies created by turnover as well as those added because of pupil growth or to perform specialized functions such as counseling.

TABLE 26

PROJECTED GROSS DEMAND FOR NEW PROFESSIONAL EMPLOYEES TO BE  
HIRED ANNUALLY BY OKLAHOMA PUBLIC SCHOOLS,  
1968-69 THROUGH 1977-78

Year	Gross Turnover Previous Year <sup>a</sup>	New Personnel To Be Added <sup>b</sup>	Gross Demand for New Professional Employees <sup>c</sup>
1968-69	5,950	603	6,553
1969-70	6,190	536	6,726
1970-71	6,425	676	7,101
1971-72	6,690	375	7,065
1972-73	6,900	382	7,282
1973-74	7,105	56	7,161
1974-75	7,120	-82	7,038
1975-76	7,100	-58	7,042
1976-77	7,085	27	7,112
1977-78	7,090	-40	7,050

<sup>a</sup> Figures extracted from Table 25.

<sup>b</sup> Computed from Table 22. The number of new personnel needed is the difference between the total number of personnel employed in a given year and the total number employed the previous year.

<sup>c</sup> For purposes of this table, "new" employees means those who were not employed in the same district the previous year.

## Calculation of Net Demand for Professionals, 1967-1977

Thus far the gross demand for professional employees projected to be hired annually over the next few years has been presented. The next portion of this chapter will treat the net demand for the same years. For purposes of this study, "net demand" will refer to beginning teachers only--those who have not had previous experience in teaching. The net demand will thus constitute a logical basis for ascertaining the approximate levels of production to be maintained by the colleges and universities in the years ahead.

In Tables 23 and 24 it was revealed that the current rate of turnover among professional employees of Oklahoma school districts is on the order of 20 per cent. That is, approximately one teacher out of five resigns his position annually, creating the need for administrators to hire about 6,000 new teachers annually to replace those lost through attrition, in addition to several hundred other employees to take care of student growth and the staffing of newly created positions. The problem in this section will be to determine how many of these estimated 6,000 to 7,000 teachers will come from the teaching reserve (both active and inactive), and how many will need to be drawn directly from the colleges and universities as newly trained teachers.

In order that reasonable estimates might be made of the beginning teachers who will need to be produced by the colleges and universities in the decade ahead, it would be helpful to know how many beginning teachers have been utilized by the public schools over the recent past. Fortunately, the Finance Division of the Oklahoma State

Department of Education gathers and compiles such data on an annual basis, showing the makeup of the teaching force employed in the public schools by years of teaching experience. Table 27 presents a breakdown of personnel by teaching experience for the years 1964-65 through 1968-69.

It will be noted from an examination of the table on experience that the teaching force as a whole in Oklahoma is far younger today than it was a few years ago. For example, the median years of experience for teachers went down from 13.5 years in 1964-65 to 10.7 in 1968-69. Going back a few years, the reduction in age is even more startling. In 1962-63, the median years of experience was 15.2, which means that the median has gone down by 4.5 years in a span of only six years. The number of inexperienced teachers has grown considerably faster during these years than the teaching force as a whole. From 1964-65 through 1968-69, the number of professional employees grew by approximately 4,000, or 17 per cent; whereas during the same period, the number of inexperienced (00 years) teachers went up from 1,826 to an estimated 2,425, or 33 per cent. It is not known whether administrators have deliberately sought to hire teachers fresh from the colleges in preference to experienced teachers in order to improve instruction, or because younger teachers can be attracted at lower salaries, or perhaps because more experienced teachers were simply not available. These are questions which cannot be answered within the confines of the current study, but should be investigated at some point in the future. It would not appear to be good public policy for administrators to hire new teachers fresh from the colleges, keep them

TABLE 27

NUMBER OF PROFESSIONAL EMPLOYEES IN OKLAHOMA PUBLIC SCHOOL  
DISTRICTS BY YEARS OF EXPERIENCE,  
1964-65 THROUGH 1968-69

Years Experience	1964-65	1965-66	1966-67	1967-68	1968-69
00	1,826	2,209	2,661	2,528	2,425
01	1,343	1,511	1,820	2,109	2,082
02	1,072	1,278	1,511	1,695	1,896
03	969	1,041	1,267	1,412	1,530
04	920	956	1,053	1,188	1,312
05	785	888	949	1,030	1,126
06	747	738	888	898	968
07	684	711	749	878	871
08	644	656	693	761	862
09	614	611	653	693	737
10	647	599	629	650	676
11	555	632	595	614	631
12	562	540	607	579	606
13	564	552	543	605	571
14	561	546	540	528	585
15 & Over	<u>11,884</u>	<u>11,920</u>	<u>11,904</u>	<u>11,811</u>	<u>11,704</u>
Total	24,377	25,388	27,062	27,979	28,582
Med. Years Experience	13.5	11.6	11.1	10.2	10.7

Source: Annual reports of the Finance Division, Oklahoma State Department of Education. Figures for 1968-69 estimated on the basis of preliminary data.

for two or three years, then discard them in favor of newer and less experienced--and less expensive--teachers. Whether or not that is happening, or whether it has happened over past years cannot be

determined here, but should be a point of concern to those in policy-making positions.

The experience table referred to above also allows for an examination of dropout from the teaching profession over the past several years. For example, those teachers with no experience (00 years) in a given year provide the bulk of those with one year's experience (01 years) in the following year. In like manner, those with one year's experience make up the great majority of those with two years' experience in the following year, etc., to the end of the table. Indications are that about 20 per cent of those who begin teaching in Oklahoma are lost after one year, that about 30 per cent are lost after four years, and approximately 50 per cent of the original number are lost by the end of ten years. If, as National Education Association figures show, only 50 per cent of those trained in Oklahoma colleges begin teaching in Oklahoma, and if 30 per cent of the teaching group drops out within four years, then only 350 teachers per 1,000 trained in Oklahoma colleges are still teaching in Oklahoma four years later, and only 250 per 1,000 are still around after ten years. These are gross data, and might not be true of any given population sample, but are nonetheless intriguing, and point out some areas for further research.

To explore the previous point further, the number of individuals teaching in Oklahoma public schools with 10 years of experience in 1968-69 was approximated at 676, according to Table 27. The bulk of these teachers probably graduated in the 1957-58 Academic Year.



In that year, Oklahoma colleges and universities graduated slightly more than 6,500 bachelor's degree students. Provided that 40 per cent of the individuals in that class had been prepared to teach--a reasonable estimate--then some 2,600 would have been trained to teach. Had one-half of those 2,600 started teaching in Oklahoma public schools, the number would have come to 1,300. Had one-half of that number survived to the ten-year mark, there would have been 650 teachers with ten years of experience listed on Table 27 in the 1968-69 year. As it turned out, the number was very close to that figure. Thus it appears that it took about 2,600 teachers trained in 1958 to guarantee that 675 would still be teaching in 1968.

The data in the preceding experience table, together with data on turnover previously presented, were utilized to arrive at estimates of the number of beginning teachers needed to supply the schools over the next few years. It is known, and that information was presented in Table 23, how many teachers terminated their positions annually in Oklahoma over the past several years. It is also known (Table 10) how many new positions were added each year in elementary and secondary schools of the state. When the number of annual terminations for a previous year is added to the number of new positions for the current year, the total comprises the number of personnel which administrators find it necessary to hire in a given year. That information was previously presented for past years, and was projected through the year 1977-78 in Table 26.

Assuming that it is known how many total teachers will need to be hired over the next several years, how is it possible to arrive at an estimate of the number to come from the teacher reserve, and the number to come from the colleges and universities? The answer to that question for past years comes from Table 27, which is a breakdown of total personnel for past years by experience category. The number of teachers listed on personnel reports each year with no experience (00 years) are those coming directly from the colleges and universities. The remainder must of necessity come from the pool of experienced teachers. Obviously, a small percentage of those individuals who begin their teaching careers in a given year do not complete college in that same year, but for purposes of this study, it is assumed that the overwhelming majority of those in the non-experience category graduated in the same year that they began teaching.

Table 28 on page 110 sets out a calculation of net demand for beginning teachers over the recent past, as well as a projection of net demand for beginning teachers through 1977-78. In this study, "net demand" refers to the demand for beginning teachers each year--those which must be furnished annually by the colleges and universities.

The most important element in Table 28 is contained in Column 7, which sets forth the expected number of beginning teachers to be needed between now and 1978. The projections for the years 1969-70 to the end of the projection period used average ratios of the three previous years, based on the relationship between total positions filled from the pool of experienced teachers vis à vis those filled

TABLE 28

CALCULATION OF NET DEMAND FOR PERSONNEL TO STAFF OKLAHOMA ELEMENTARY  
AND SECONDARY SCHOOLS, 1964-65 THROUGH 1967-68 ACTUAL, WITH  
PROJECTIONS THROUGH THE YEAR 1977-78

Year (1)	Total Professional Personnel (2)	New Positions Added, Current Year Over Previous Year (3)	Terminations In Previous Year (4)	Total Positions To Be Filled: Column 3 + Column 4 (5)	Portion To Be Filled From Teacher Reserve (6)	Portion To Be Filled With Beginning Teachers (Net Demand) (7)	Per Cent Filled From Reserve (8)	Per Cent Filled From Beginning Teachers (9)
1963-64	23,687	--	--	--	--	--	--	--
1964-65	24,377	690	3,325	4,015	2,189	1,826	54.5	45.5
1965-66	25,380	1,003	4,129	5,132	2,923	2,209	57.0	43.0
1966-67	27,062	1,682	5,189	6,871	4,210	2,661	61.3	38.7
1967-68	27,979	917	5,645	6,562	4,034	2,528	61.5	38.5
1968-69 <sup>a</sup>	28,582	603	5,950	6,553	4,128	2,425	63.0	37.0
1969-70	29,118	536	6,190	6,726	4,171	2,555	62.0	38.0
1970-71	29,794	676	6,425	7,101	4,401	2,700	62.0	38.0
1971-72	30,169	375	6,690	7,065	4,380	2,685	62.0	38.0
1972-73	30,551	382	6,900	7,282	4,512	2,770	62.0	38.0
1973-74	30,607	56	7,105	7,161	4,441	2,720	62.0	38.0
1974-75	30,525	-82	7,120	7,038	4,363	2,675	62.0	38.0
1975-76	30,467	-58	7,100	7,042	4,367	2,675	62.0	38.0
1976-77	30,494	27	7,085	7,112	4,412	2,700	62.0	38.0
1977-78	30,454	-40	7,090	7,050	4,370	2,680	62.0	38.0

Sources: Data in Column 2 taken from Tables 10 and 22. Column 3 data were derived from Table 10 and Table 26. Data in Column 4 taken from Tables 23 and 26. The data contained in Column 6 were derived by subtracting Column 7 from Column 5. The data in Column 7 were taken from Table 27.

<sup>a</sup>Data for 1968-69 estimated on basis of preliminary information.

with beginning teachers. It will be noted that for the years 1966-67 through 1968-69, these relationships were noticeably stable, with approximately 62 per cent of total positions filled in each of these years from the teacher reserve, and approximately 38 per cent filled with recent graduates. That particular relationship was continued for the remainder of the projection period, since those years are envisioned to be a time of stable enrollments and relatively stable demand for teachers. It will be noted that there is little fluctuation in the number of beginning teachers to be needed for the projection period. The year 1968-69 saw approximately 2,425 beginning teachers hired by Oklahoma schools. By 1972, that number is projected to rise to a high of 2,770, then decline to a period-ending figure of 2,680 in 1977.

It should be pointed out that the projection of demand as set out in Table 28 was based on the overall projections of need for professional personnel as presented earlier in this chapter. In the event that the number of teachers in Oklahoma schools goes beyond or falls short of those figures projected in Table 22, then the demand for beginning teachers will likewise move up or down accordingly. Also, in the event that the termination rates for teachers differ from those projected in Table 25, the demand for new teachers would fluctuate in like manner.

In addition to the projection of beginning teachers made in Table 28, a second and discrete projection was made in an attempt to establish a possible range of demand for the projection period. That projection is presented in Table 29, which table contains a year-by-

year forecast of the expected numbers of teachers by experience category. In the compilation of Table 29, the number of teachers in each of the experience categories was "survived" from one year to the next, using ratios obtained from the most recent report on experience published by the Oklahoma State Department of Education, as contained in Table 27, page 106.

It will be observed that the net demand for beginning teachers as projected in Table 29 (line one) is slightly smaller than the demand as projected in Table 28. For example, in Table 28, the range of beginning teachers projected runs from 2,425 in 1968-69 to a period-ending figure of 2,680 in 1977-78. In Table 29, the range is from 2,425 in 1968-69 down to a figure of 2,000 in 1977-78. Thus there is envisioned a demand for beginning teachers ranging from 2,000 to 2,700 per year by the year 1977-78.

#### Summary of Teacher Demand, 1967-1977

This chapter has presented the projected needs of Oklahoma elementary and secondary schools for professional personnel over the decade 1967-1977. The initial portion of the chapter was concerned with historical enrollment trends and teacher utilization patterns in the Oklahoma public schools over the decade past. Following that, projections of student enrollment and numbers of teachers to be needed were set forth for the decade ahead, based on historical birth rates, retention ratios, and pupil-teacher ratios. The final portion of the chapter has treated the problem of teacher turnover, in order that the net annual demand for teachers and other professional personnel could be separated and analyzed apart from the overall demand.

TABLE 29

NUMBER OF PROFESSIONAL PERSONNEL PROJECTED TO BE EMPLOYED IN OKLAHOMA  
ELEMENTARY AND SECONDARY SCHOOLS, 1968-69 THROUGH 1977-78,  
BY YEARS OF TEACHING EXPERIENCE

Years of Experience	1968-69 <sup>a</sup>	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	Ratio
00	2,425	2,437	2,568	2,332	2,338	2,038	1,892	1,951	2,013	2,000	82.4
01	2,082	1,998	2,008	2,116	1,922	1,927	1,679	1,559	1,608	1,658	89.9
02	1,896	1,872	1,796	1,805	1,902	1,728	1,732	1,509	1,402	1,446	90.3
03	1,530	1,712	1,690	1,622	1,630	1,718	1,560	1,564	1,363	1,266	92.9
04	1,312	1,421	1,590	1,570	1,507	1,514	1,596	1,449	1,453	1,265	94.8
05	1,126	1,244	1,347	1,507	1,488	1,429	1,435	1,513	1,374	1,377	94.0
06	968	1,058	1,169	1,266	1,417	1,399	1,343	1,349	1,422	1,291	97.0
07	871	939	1,026	1,134	1,228	1,374	1,357	1,303	1,309	1,379	98.2
08	862	855	922	1,008	1,114	1,206	1,349	1,333	1,280	1,285	96.8
09	737	834	828	892	976	1,078	1,167	1,306	1,290	1,239	97.5
10	676	719	813	807	870	952	1,051	1,138	1,273	1,258	97.1
11	631	656	698	789	784	845	924	1,021	1,105	1,236	98.7
12	606	623	647	689	779	774	834	912	1,008	1,091	98.6
13	571	598	614	638	679	768	763	822	899	994	96.7
14	585	552	578	594	617	657	743	738	795	869	
15 & Up	11,704	11,600	11,500	11,400	11,300	11,200	11,100	11,000	10,900	10,800	
Total	28,582	29,118	29,794	30,169	30,551	30,607	30,525	30,467	30,494	30,454	

<sup>a</sup>1968-69 data based on preliminary information from Oklahoma State Department of Education.

In summary, Chapter V has shown that the number of students in Oklahoma public elementary and secondary schools is scheduled to decline from a 1967-68 figure of 619,000 to a 1977-78 figure of approximately 582,000, a projected decrease of nearly 40,000. This projected decrease in students is expected to occur in the face of a sizeable increase in pupils at the kindergarten level. The greatest decreases are expected to take place at the elementary (1-6) level, where enrollments are projected to decline from about 313,000 to about 252,000. Secondary enrollments are due to move from about 278,000 in 1967-68 to an intermediate high of about 293,000 in 1973-74, falling back to approximately 276,000 in 1977-78.

The number of teachers and other professional personnel needed for the public schools is projected to rise over the next decade, in spite of the expected decrease in students. Overall employment of professionals is expected to move from 27,979 in 1967-68 to 30,454 in 1977-78. Employment of classroom teachers is projected to move upward from 25,429 in 1967-68 to a total of 27,407 in 1972-73, then dip slightly to a figure of 26,620 by the year 1977-78. Pupil-teacher ratios at both elementary and secondary levels are projected to move downward from their present levels (the number of pupils per classroom teacher is currently 24.8 in the elementary school and 23.9 in secondary) to a minimum of 22 pupils per teacher by the end of the decade projected. Specialized personnel such as counselors, librarians, school nurses, and the like are expected to increase at a greater rate than classroom teachers or administrators.

Teacher turnover will create far more demand for personnel over the next decade than will other factors. At present, the rate of turnover among professional employees of school districts is slightly greater than 20 per cent--about one teacher in five. This ratio is projected to increase over the next five years, then level off and stabilize for the remainder of the decade projected. Because of teacher turnover, together with the need to add some new personnel to reduce student-teacher ratios, the annual demand for new personnel (those which administrators will have to hire annually) is projected to reach 7,100 by 1977-78, as compared with a figure of approximately 6,500 annual additions at the beginning of the decade.

Of the 6,500 to 7,100 teachers who will need to be hired annually between now and 1977-78, approximately 60 per cent will come from the pool of experienced teachers, with about 40 per cent being hired directly from the colleges and universities. In 1967-68, the last year for which final statistics are available, public schools hired a total of 6,562 "new" professionals, which included 5,645 teachers hired to replace those lost through attrition, and 917 employed to fill newly created positions. Of the new teachers hired in that year, some 4,034, or 61.5 per cent, were recruited from among the teacher reserve (experienced teachers), and 2,528, or 38.5 per cent, were recruited from the colleges and universities (inexperienced teachers).

For the upcoming decade, it is envisioned that the public schools will be recruiting from 2,000 to 2,800 teachers annually from the colleges and universities, and from 4,100 to 5,000 annually from



among those who have previously taught in other school systems. For purposes of this study, the needs of the public schools for beginning teachers is the most important of the two sources mentioned above, since the output of colleges and universities will probably--even hopefully--be conditioned upon societal needs for teachers, rather than upon the generalized assumption that society can always use a few more teachers.

## CHAPTER VI

### TEACHER SUPPLY IN OKLAHOMA

The previous chapter dealt with the problem of teacher demand in Oklahoma, treating both the overall and net dimensions of the need for trained professionals in public elementary and secondary schools for the coming decade. It was revealed that approximately 20 per cent of the total teaching force turns over annually, creating the need for school districts to hire approximately 6,000 professionals each year to replace those lost through turnover. In addition, there was pointed out the need for the hiring of a few hundred additional personnel annually to reduce pupil-teacher ratios and to perform specialized functions such as counseling. The conclusion was reached that administrators would need to anticipate the hiring of 6,500 to 7,000 professionals annually from now through the year 1977-78, in order to meet the anticipated needs of the public schools.

It was further pointed out in Chapter V that of the 6,500 to 7,000 professionals needed annually to supply the public schools, approximately 4,100 to 5,000 could be expected to come from the pool of experienced teachers (many of whom would simply be moving from one school district to another), and that 2,000 to 2,800 beginning teachers would need to be turned out annually by the colleges to make up the deficit. This anticipated level of demand for beginning teachers is approximately equal to the demands of the past two or three years.

Chapter VI will treat the problem of teacher production historically on the part of the state's colleges and universities, which in turn will lay the groundwork for a projection of future production by these institutions. Following that, the future supply will be related to the future demand projected previously in Chapter V, forming the basis for the conclusions and recommendations to be presented in Chapter VII.

#### Previous Levels of Teacher Supply

Two basic sources of teacher manpower data are available to those seeking to do research on teacher supply and demand: (1) information compiled by the National Education Association in its annual supply and demand studies; and (2) data reported by the Oklahoma State Department of Education's Division of Teacher Education and Certification. A presentation of historical data from these sources will be made, on the basis of which projections of future supply in teacher education will be forthcoming.

#### *NEA Estimates of Teacher Supply in Oklahoma*

Annual supply and demand studies of the National Education Association contain yearly estimates by state of the number of teachers produced by colleges and universities. These estimates are based on data supplied by state departments of education in each of the states, and are broken down by level and by teaching field. For purposes of this study, the breakdown of statistics will be by two levels only: elementary and secondary. The following table reports the numbers prepared to teach by Oklahoma colleges and universities by level for

the years 1960-61 through 1966-67. In addition, it sets forth teachers prepared as a ratio of total degrees conferred at the bachelor's level by Oklahoma institutions.

TABLE 30

TEACHERS PREPARED BY OKLAHOMA COLLEGES AND UNIVERSITIES, 1960-61 THROUGH 1966-67, BY LEVEL, AS A RATIO OF TOTAL BACHELOR'S AND FIRST PROFESSIONAL DEGREES CONFERRED

Year	Elementary		Secondary		Teachers Prepared As A Ratio Of Total Degrees Conferred
	No.	As A Ratio Of Total Degrees Conferred	No.	As A Ratio Of Total Degrees Conferred	
1960-61	775	11.3	1,955	28.6	39.9
1961-62	843	12.4	2,267	33.2	45.6
1962-63	1,026	14.1	2,280	31.2	45.3
1963-64	1,078	13.9	2,269	29.3	43.2
1964-65	1,099	13.6	2,405	29.7	43.3
1965-66	1,277	14.4	2,379	26.8	41.2
1966-67	1,390	15.0	2,635	28.4	43.4

Source: Annual reports of the National Education Association, Teacher Supply and Demand in Public Schools, 1962 through 1967. Data for 1960-61 and 1961-62 reported in 1962 issue, Table 2. Data for 1962-63 reported in 1964 issue, Table 2. Data for 1963-64 reported in 1965 issue, Table 3. Data for 1964-65 reported in 1966 issue, Table 4. Data for 1965-66 and 1966-67 reported in 1967 issue, Tables 5 and 6. Information on number of degrees conferred taken from Table 33.

Provided that the estimates in Table 30 are reasonably accurate, then the production of elementary teachers in Oklahoma soared in Oklahoma colleges and universities from 775 in 1960-61 to 1,390

in 1966-67, a percentage increase of 79.4 per cent over the seven-year span. Also, the preparation of secondary teachers went up during the same years from 1,955 to 2,635, an increase of 34.8 per cent. When the production of teachers is compared with total bachelor's degrees conferred by Oklahoma colleges for the corresponding years, it is noted that teacher production has gone up faster than total degrees conferred, particularly at the elementary level. From 1960 to 1967, for example, the ratio between elementary teachers prepared and total degrees conferred went up from 11.3 per cent to 15.0 per cent. There was little or no change at the secondary level for the same period.

On the surface, it would appear that the production of teachers by Oklahoma colleges and universities during recent years should have been more than sufficient to meet enrollment increases in Oklahoma public schools, provide for a reduction in pupil-teacher ratios, and at the same time furnish other states with an increasing number of teachers annually. There is some evidence to indicate that most of these things did indeed occur. Pupil-teacher ratios, for example, declined in Oklahoma public schools by 2.5 pupils-per-teacher during the past five years alone. However, statistics of the National Education Association show that both the number and percentage of new Oklahoma graduates going outside Oklahoma to teach has gone down over the past four years, and that both the number and percentage of new graduates remaining in Oklahoma to teach has gone up steadily over the same period. Also, that organization's reports show that the

overall percentage of Oklahoma teacher education graduates going into teaching immediately upon graduation increased from two-thirds in 1963 to nearly three-fourths in 1966.

The following table sets out the percentage of Oklahoma teacher education graduates for a four-year period who began teaching in Oklahoma, who went out-of-state to teach, and who did not teach immediately upon graduation, as reported by the National Education Association.

TABLE 31

PERCENTAGE OF TEACHER EDUCATION GRADUATES FROM OKLAHOMA COLLEGES WHO TAUGHT IN OKLAHOMA, IN OTHER STATES, OR WHO DID NOT TEACH ANYWHERE IMMEDIATELY UPON GRADUATION, 1963 THROUGH 1966

Year	Per Cent Teaching in Oklahoma	Per Cent Teaching in Other States	Per Cent Not Teaching	Total
1963	36.6	29.4	34.0	100.0
1964	39.4	31.9	28.7	100.0
1965	43.8	28.2	28.0	100.0
1966	49.5	24.2	26.3	100.0

Source: National Education Association, Teacher Supply and Demand in Public Schools, 1964 through 1967. For 1964 and 1965, data were calculated from Table 8. For 1966, data were calculated from Table 9. For 1967, calculations were made from Table 10.

Table 31 actually shows that in spite of greatly increased production on the part of Oklahoma colleges and universities during recent years--production which greatly outstripped the growth in pupil enrollment--the percentage of Oklahoma teacher education gradu-

overall percentage of Oklahoma teacher education graduates going into teaching immediately upon graduation increased from two-thirds in 1963 to nearly three-fourths in 1966.

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Year	Per Cent Teaching in Oklahoma	Per Cent Teaching in Other States	Per Cent Not Teaching	Total
1963	36.6	29.4	34.0	100.0
1964	39.4	31.9	28.7	100.0
1965	43.8	28.2	28.0	100.0
1966	49.5	24.2	26.3	100.0

Source: National Education Association, Teacher Supply and Demand in Public Schools, 1964 through 1967. For 1964 and 1965, data were calculated from Table 8. For 1966, data were calculated from Table 9. For 1967, calculations were made from Table 10.

Table 31 actually shows that in spite of greatly increased production on the part of Oklahoma colleges and universities during recent years--production which greatly outstripped the growth in pupil enrollment--the percentage of Oklahoma teacher education gradu-

ates remaining in Oklahoma has gone up steadily during this period, and the percentage of Oklahoma graduates going out-of-state to teach has gone down. These data would appear to be anomalous, if not contradictory. Assuming that the data are essentially correct, however--and that assumption is being made here--what might account for the apparent discrepancies? Two things would come to mind as logical possibilities. One, it might have been that Oklahoma public schools were adding teachers at a rate much greater than the growth in student enrollment, in which case the demand for beginning teachers would probably have gone up accordingly. Two, provided that the turnover rates in Oklahoma schools were accelerating rapidly, with greater and greater numbers of experienced teachers leaving the state or the profession annually, then the demand for beginning teachers would have been expected to accelerate accordingly. Both of these factors appear to have been in operation during the period under investigation.

In spite of these recent trends which show that Oklahoma is making better utilization of its teacher education graduates, it is still important to note that in the latest year for which statistics are available, only about one-half of the teacher education graduates from the colleges were going to work in Oklahoma public schools. Table 31 indicates that of every 1,000 teacher education graduates trained in 1966 by Oklahoma colleges and universities, 495 began teaching in Oklahoma schools, 242 began teaching in schools located in other states, and 293 did not teach anywhere. The overwhelming majority of the latter group was comprised of those trained at the secondary level.



### Other Estimates of Teacher Supply

Although the National Education Association receives its basic data on teacher supply through the Teacher Education and Certification Division of the Oklahoma State Department of Education, the latter agency also publishes statistics which give some independent indication of supply. Whereas the data published by the National Education Association in past years were concerned primarily with those graduating at the bachelor's level with preparation to teach, the Oklahoma State Department of Education publishes data which are more inclusive. For example, the State Department of Education has for the past two years issued an annual report on the number of individuals who received Standard teaching certificates in both elementary and secondary education. That report, which is summarized in the table on page 124, indicates higher figures for teacher production in 1965-66 and 1966-67 than those reported by the National Education Association.

It is reasonable to assume that both the National Education Association's data and that of the Oklahoma State Department of Education are much better measures of total teacher production than is degree data alone; therefore, the projections of teacher manpower to be made in connection with the decade 1967-1977 will utilize a range based on the historical percentage that each of those two measures has borne to total degree production in Oklahoma higher education. For example, in 1966-67, data from the National Education Association showed that the number of elementary teachers trained in Oklahoma was 15.0 per cent of total degree production in Oklahoma. The figure for secondary teachers was 28.4 per cent, making a combined ratio for

both elementary and secondary education of 43.4 per cent of total degrees conferred.

TABLE 32

OKLAHOMA STATE DEPARTMENT OF EDUCATION DATA SHOWING NUMBER OF STUDENTS COMPLETING PREPARATION FOR STANDARD TEACHING CERTIFICATES AT OKLAHOMA COLLEGES AND UNIVERSITIES, 1965-66 AND 1966-67, AS COMPARED WITH DATA FROM THE NATIONAL EDUCATION ASSOCIATION ON OKLAHOMA STUDENTS PREPARED TO TEACH IN ELEMENTARY AND SECONDARY SCHOOLS

Year	Elementary Education		Secondary Education	
	NEA Report	St. Dept. of Educ.	NEA Report	St. Dept. of Educ.
1965-66	1,277	1,503	2,379	2,728
1966-67	1,390	1,701	2,635	3,148

Sources: Data from Oklahoma State Department of Education summarized from Table VII, The Thirty-Second Biennial Report of the State Department of Education of Oklahoma: 1968, page 45. NEA data from Teacher Supply and Demand in Public Schools, 1967, Tables 5 and 6.

Oklahoma State Department of Education data for the same year showed that the number completing requirements for elementary teaching certificates was equal to 18.3 of total bachelor's degrees conferred, with the figure for secondary education being 33.9 per cent, for a combined ratio of 52.2. Thus, it was estimated that a number of teachers equal to a range between 43.4 per cent and 52.2 per cent of Oklahoma's graduates at the bachelor's level was produced in Oklahoma in 1966-67. The latter ratio, however, contains both bachelor's

and master's degree graduates, as well as those who completed certification requirements without the completion of formal degree requirements. The latter figures might also have been inflated slightly by the inclusion of some few individuals who may have been teaching concurrently with the completion of Standard teaching certificates, in which event those individuals could not properly be counted as "beginning teachers."

In assessing the two measures of teacher production reviewed here, it is probable that the data from the National Education Association do not fully reflect the total number of teachers prepared annually by Oklahoma colleges and universities. It is also probable that the data from the Oklahoma State Department of Education used here are probably somewhat inflated by the inclusion of some individuals not classifiable as beginning teachers. It is thus likely that the National Education Association data are at the lower end of the range, and that the Oklahoma State Department of Education data are at the upper end of the range, and that the true supply of "beginning" teachers in a given year probably lies in between. Therefore, both of these two measures will be utilized in the projections to be made later in this chapter, in order that both the upper and lower ranges be included in plotting estimates of teacher supply for the coming decade.

#### Future Production of Teachers in Oklahoma

The accurate projection of an event or series of events is always dependent upon making the right assumption or assumptions. In

attempting to project the possible number of individuals who might enter upon a teaching career at some point in the future, the problem is to determine whether or not college students will continue to do what they have done in the past, or whether they will deviate from that pattern in a significant manner. Provided that they continue to go into teaching to the same degree as their older brothers and sisters, the percentage of students enrolling in teacher education will comprise a greater and greater proportion of total graduates annually. Whether or not this trend will continue, or whether it will be reversed, is not yet apparent. All of the data seem to point toward an increasing percentage of total graduates preparing for teaching, yet reason would seem to dictate that as the market demand for beginning teachers becomes satisfied, the percentage of students going into teaching will drop, or at least become stable.

Even though all of the recent signs point toward a continuing increase in the percentage of college graduates going into teacher education, the projections of teacher supply to be made in this chapter will be predicated on the notion that the percentage of graduates preparing for teaching will approximate that of the past two years. Thus the rationale of the projections will be as follows: this is what will happen in teacher supply provided that students continue to do what they have been doing. Although that is probably a naive assumption, it is probably even more naive to assume that they will not continue to do what they have done in the past.

In projecting the number of teachers to be produced in Oklahoma for the upcoming decade, the basic factor to be considered is

the number of degrees to be conferred at the bachelor's level. Since it is not possible to be certified as a teacher in Oklahoma without a bachelor's degree or its equivalent, the pool from which teachers are drawn is of necessity the pool of bachelor's level graduates. Although a few teachers postpone entry into the classroom until they have earned the master's degree, that number is equivalent to less than 2.5 per cent of the beginning teachers in Oklahoma public schools.<sup>1</sup> Therefore it is vital to discover the relationship between bachelor's degrees conferred and teacher production. The section to follow will contain a projection of bachelor's and first professional degrees for Oklahoma colleges and universities for the period 1968-69 through 1977-78.

#### Projection of Bachelor's Degrees

From 1957-58 to 1967-68, bachelor's and first professional degrees conferred by Oklahoma colleges and universities increased by slightly over 50 per cent, going from 6,524 in 1958 to a total of 9,958 in 1968. For the upcoming decade, the prospects are considerably greater than for the decade past, even though the growth in high-school graduates is not expected to be as spectacular in future years as during the years when the "war babies" were making their way through the high schools into the colleges. It will be recalled that there was an enrollment bulge in the colleges and universities beginning in

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<sup>1</sup>Data from the State Department of Education show that in 1968-69, slightly more than 50 master's level teachers were included in the 2,425 teachers without prior experience employed by Oklahoma's public school districts. That number was equal to about 2.3 per cent of the total inexperienced teachers.

1964 and continuing until the present. That group of students began graduating from the colleges in 1967-68, but the greatest increases are yet to come. Table 33, shown on the following page, gives an indication of expected growth at the bachelor's level, as well as anticipated numbers of college students to be enrolled in Oklahoma through the year 1977-78.

An examination of Table 33 reveals that bachelor's and first professional degrees are projected to rise in Oklahoma higher education from 9,958 in 1967-68 to more than 18,000 in 1977-78, an increase of 81 per cent. The great majority of that increase is expected to come between now and 1972-73. By 1973, it is expected that more than 15,000 students will be graduating annually at the bachelor's level at Oklahoma institutions, an increase of more than 5,000 graduates over present production. Barring any major disaster or unanticipated social upheaval, these projections are almost certain to be realized. In fact, they probably will need to be revised upward, provided that past projections of higher education enrollments are a good indication of future events.

Projection of Elementary Teachers.--In projecting the new supply of elementary teachers for the decade ahead, two separate projections will be made, one based on historical ratios extrapolated from data of the National Education Association, and the other based on historical data of the Oklahoma State Department of Education. In each case, the calculation will be as follows: Total bachelor's degrees expected to be conferred by colleges and universities from

TABLE 33

ENROLLMENT AND DEGREES CONFERRED IN OKLAHOMA COLLEGES  
AND UNIVERSITIES, 1962-68 ACTUAL,  
WITH PROJECTIONS TO 1977

Year	College Freshmen	College Sophomores	College Juniors	College Seniors	Other and Special	Total College Enroll.	Bachelor's Degrees Conferred
1962	18,748	12,776	9,569	8,818	13,045	62,956	7,297
1963	19,027	13,485	9,972	9,501	15,435	67,420	7,742
1964	23,485	14,310	11,067	10,121	16,642	75,625	8,108
1965	29,745	17,594	11,751	11,108	16,165	86,363	8,886
1966	28,446	19,819	13,104	11,551	16,728	89,648	9,277
1967	29,515	20,859	15,339	12,904	16,937	95,554	9,958
1968	31,850	21,202	15,650	14,998	17,649	101,349	11,700
1969	33,570	23,455	16,030	15,525	19,185	107,765	12,265
1970	34,270	24,750	17,780	15,950	20,600	113,350	12,760
1971	36,200	25,300	18,810	17,740	22,800	120,850	14,280
1972	36,825	26,750	19,350	18,800	24,500	126,225	15,225
1973	37,300	27,250	20,600	19,350	26,000	130,500	15,770
1974	38,000	27,975	21,100	20,600	27,500	135,175	16,890
1975	39,000	28,900	21,800	21,100	29,500	140,300	17,400
1976	40,000	29,850	22,700	21,800	31,500	145,850	17,950
1977	41,000	30,800	23,600	22,700	33,500	151,600	18,700

Source: Data for years prior to 1969 from files of the Oklahoma State Regents for Higher Education.

now through the year 1977-78 will be multiplied times a ratio expected to obtain between total degrees conferred and elementary teachers prepared. For example, in 1966-67, the ratio of elementary teachers prepared and total bachelor's degrees conferred in Oklahoma was 15.0 per cent, based on National Education Association data. The ratio for the same year was 18.3 per cent, based on Oklahoma State Department of Education figures. For purposes of the projections to follow, the ratios to be used are based upon an average for the two years 1965-66 and 1966-67. Projection "A" will be based on National Education Association figures, and Projection "B" will be based on figures of the Oklahoma State Department of Education.

It will be noted that each of the two projections in Table 34 calls for an increase in new teachers of approximately 75 per cent over the years of the projection period. For comparative purposes, it is interesting to note that the number of degrees conferred by Oklahoma institutions in elementary education in 1968 totaled 1,334, not counting master's degrees. That number compares with a projected figure of 1,465 teachers prepared for 1968-69 under Projection "A", and 1,755 teachers prepared under Projection "B". Thus it is estimated that the number of teachers prepared for elementary teaching this year exceeds the number of degrees conferred by Oklahoma colleges in elementary education last year by approximately 10 per cent and 30 per cent, respectively, depending upon whether the figures of the National Education Association or Oklahoma State Department of Education are used. It should be emphasized that while historical figures



of those two agencies were used as the basis for deriving the ratios for the projections contained in this chapter, the responsibility for the projections is solely that of the author, and not the organizations whose data were used to derive the ratios.

TABLE 34

NUMBER OF ELEMENTARY TEACHERS PROJECTED TO BE PREPARED BY  
OKLAHOMA COLLEGES AND UNIVERSITIES,  
1968-69 THROUGH 1977-78

Year	Bachelor's Degrees Previous Year	Projection "A"		Projection "B"	
		Number Prepared	% of Total Degrees	Number Prepared	% of Total Degrees
1968-69	9,958	1,465	14.7 <sup>a</sup>	1,755	17.6 <sup>a</sup>
1969-70	11,720	1,720	"	2,060	"
1970-71	12,265	1,805	"	2,160	"
1971-72	12,760	1,875	"	2,245	"
1972-73	14,280	2,100	"	2,515	"
1973-74	15,225	2,240	"	2,680	"
1974-75	15,770	2,320	"	2,775	"
1975-76	16,890	2,485	"	2,975	"
1976-77	17,400	2,560	"	3,060	"
1977-78	17,650	2,600	"	3,100	"

<sup>a</sup>Ratio obtained from data in Tables 32 and 33. Projection "A" is based on NEA figures. Projection "B" is based on figures of the Oklahoma State Department of Education.

Projection of Secondary Teachers.--As was the case in the projection of elementary teachers in the preceding section, two projections of secondary teachers will be made in this section of the study, one based on historical data obtained from reports of the National Education Association, and the other based on data from the Oklahoma State Department of Education. Table 35 sets out these projections in the same style and order used in Table 34.

TABLE 35

NUMBER OF SECONDARY TEACHERS PROJECTED TO BE PREPARED BY  
OKLAHOMA COLLEGES AND UNIVERSITIES,  
1968-69 THROUGH 1977-78

Year	Bachelor's Degrees Previous Year	Projection "A"		Projection "B"	
		Number Prepared	% of Total Degrees	Number Prepared	% of Total Degrees
1968-69	9,958	2,750	27.6 <sup>a</sup>	3,055	30.7 <sup>a</sup>
1969-70	11,700	3,230	"	3,590	"
1970-71	12,265	3,385	"	3,765	"
1971-72	12,760	3,520	"	3,910	"
1972-73	14,280	3,940	"	4,385	"
1973-74	15,225	4,200	"	4,675	"
1974-75	15,770	4,350	"	4,840	"
1975-76	16,890	4,660	"	5,185	"
1976-77	17,400	4,800	"	5,340	"
1977-78	17,650	4,870	"	5,420	"

<sup>a</sup>Ratio obtained from data in Tables 32 and 33. Projection "A" is based on NEA figures. Projection "B" is based on figures from the Oklahoma State Department of Education.

As previously pointed out, it is difficult to assess the number of individuals prepared to teach at the secondary level by comparison with the number of degrees conferred in teacher education; therefore, the ratios used in projecting secondary teachers in Table 35 are based solely on secondary teachers as a per cent of total degrees conferred. It is estimated that a number of individuals equal to approximately 28 to 30 per cent of total bachelor's degrees conferred is prepared annually by the colleges and universities. Projection "A" would provide for some 2,750 secondary teachers in 1968-69, and a total of 4,870 teachers by 1977-78. Projection "B" calls for 3,055

secondary teachers to be available in 1968-69, and a total of 5,420 by 1977-78, assuming that the ratio between secondary teachers and total degrees remains constant between now and then.

Total Elementary and Secondary Teachers Projected.--In order that the total new supply of teachers anticipated to be produced by Oklahoma colleges and universities between now and 1977-78 might be arrived at, it is necessary to add the number of elementary teachers projected in Table 34 to the number of secondary teachers projected in Table 35. The total of those two projections is summarized in Table 36, as presented below:

TABLE 36  
TOTAL NUMBER OF ELEMENTARY AND SECONDARY TEACHERS PROJECTED  
TO BE PREPARED BY OKLAHOMA COLLEGES AND UNIVERSITIES,  
1968-69 THROUGH 1977-78

Year	Bachelor's Degrees Previous Year	Projection "A"		Projection "B"	
		Number Prepared	% of Total Degrees	Number Prepared	% of Total Degrees
1968-69	9,958	4,215	42.3 <sup>a</sup>	4,810	48.3 <sup>a</sup>
1969-70	11,700	4,950	"	5,650	"
1970-71	12,265	5,190	"	5,925	"
1971-72	12,760	5,395	"	6,155	"
1972-73	14,280	6,040	"	6,900	"
1973-74	15,225	6,440	"	7,355	"
1974-75	15,770	6,670	"	7,615	"
1975-76	16,890	7,145	"	8,160	"
1976-77	17,400	7,360	"	8,400	"
1977-78	17,650	7,470	"	8,520	"

<sup>a</sup>The ratios contained in this table were computed from data presented in Tables 32 and 33. Projection "A" is based on historical ratios taken from reports of the NEA, while Projection "B" is based on data from the Oklahoma State Department of Education.

Provided that the estimates as contained in Projection "A" are accepted, Oklahoma institutions can expect to move from approximately 4,200 total teachers prepared for 1968-69 to about 7,500 teachers prepared for the 1977-78 school year. The estimates in Projection "B" are slightly higher, going up from approximately 4,800 in 1968-69 to a total of 8,500 in 1977-78. In both cases, the percentage growth in teachers produced would be equivalent to the growth in total bachelor's degrees conferred. Provided that the actual number of teachers produced falls within the range of the two projections made here, the increase in teacher production by 1977-78 would be on the order of 75 per cent over current levels of production.

#### Relationship of Supply and Demand

In relating the projected supply to the projected demand for elementary and secondary teachers for the upcoming decade, the point should be made that the term "demand" as used in this portion of the chapter, has reference to net demand for beginning teachers only, and not to the total demand for teachers. Thus if the point is made that there will be a net demand for teachers in 1977-78 on the order of 2,700, that figure has reference to the number of beginning teachers which will need to be furnished from the colleges and universities in that year, not to the gross demand for individuals to fill vacancies left by turnover, etc. In like manner, the term "supply" will refer to net supply only, meaning the number of beginning teachers expected to be produced in a given year by the colleges and universities in Oklahoma.

Table 37 on the bottom of this page presents a summary of two different measures of projected demand for public school teachers previously set out in Chapter V, as well as two different measures of supply set out in Chapter VI. It will be noted that the demand figures for both projections shown in Table 37 are identical for the year 1967-68. All other statistics, however, are projected, including the supply figures used for the 1967-68 school year. In each case, the smaller of the two projections is categorized as Projection "A", with the larger being Projection "B".

TABLE 37

SUMMARY OF TWO DIFFERENT SUPPLY AND DEMAND PROJECTIONS FOR  
BEGINNING TEACHERS TO STAFF OKLAHOMA PUBLIC ELEMENTARY  
AND SECONDARY SCHOOLS, 1967-68 THROUGH 1977-78

Year	Demand for Beginning Teachers <sup>a</sup>		Supply of Beginning Teachers <sup>b</sup>	
	Projection "A"	Projection "B"	Projection "A"	Projection "B"
1967-68	2,528 <sup>c</sup>	2,528 <sup>c</sup>	4,025	4,849
1968-69	2,425 <sup>d</sup>	2,425 <sup>d</sup>	4,215	4,810
1969-70	2,437	2,555	4,950	5,650
1970-71	2,568	2,700	5,190	5,925
1971-72	2,332	2,685	5,395	6,155
1972-73	2,338	2,770	6,040	6,900
1973-74	2,038	2,720	6,440	7,355
1974-75	1,892	2,700	6,670	7,615
1975-76	1,951	2,675	7,145	8,160
1976-77	2,013	2,700	7,360	8,400
1977-78	2,000	2,680	7,470	8,520

<sup>a</sup>Projection "A" on the demand side was previously presented in Table 29. Projection "B" was taken from Table 28.

<sup>b</sup>Both Projection "A" and Projection "B" on the supply side were originally presented in Table 36.

<sup>c</sup>Actual.

<sup>d</sup>Estimated on basis of preliminary data.

Regardless of whether Projection "A" or Projection "B" is used to relate the anticipated supply of beginning teachers to the anticipated demand for the 1970's, the story is the same--the supply is projected to skyrocket, with the demand projected to be relatively stable throughout the period. Whereas current data show that the colleges already produce from 60 per cent to 90 per cent more teachers than are presently consumed by Oklahoma schools, projections for the decade ahead show that if present trends continue, the colleges will be turning out three and one-half to four times as many new teachers as the public schools will be able to employ under current rates of consumption.

With regard to the output and employment of teachers by level, it would appear that the demand for new elementary teachers will be on the order of 1,000 to 1,200 per year throughout the period 1968-69 to 1977-78, whereas the total output of elementary teachers is expected to reach 2,600 to 3,100 per year by 1977-78. Thus it would appear that there could be a surplus of elementary teachers on the order of 1,500 to 2,000 per year by the year 1977.

At the secondary level, the outlook is for demand to reach 1,200 to 1,450 annually by the end of the projection period, with the supply anticipated to reach levels of 4,900 to 5,400 by that time. Thus there is a projected surplus of secondary teachers of from 3,600 to 4,000 per year by 1977, provided that current rates of production and consumption continue.

It should be emphasized that the supply and demand figures presented here are based on the continuation of current rates of out-

put and utilization of teachers. In the event that the national market is closed off within the next few years, as this study indicates might happen, the surpluses envisioned here could be greater than projected. Of course, in that event, production would probably be curtailed to some extent, though perhaps not soon enough to avoid a serious saturation of the market.

One significant sector of demand which was not taken into account in this study is the junior college market. In the past, Oklahoma has not had a significant enrollment in junior colleges, particularly in comparison with states such as Texas, California, Florida, Illinois and New York. Over the next few years, however, it is envisioned that there will be several new junior colleges to emerge in Oklahoma, with two--the new Tulsa Junior College and the Oscar Rose Junior College--already in process of development. To the extent that these junior colleges enroll students who would not otherwise have gone to college, to that same extent there will be additional demands for new teachers not anticipated in this study. It is believed that most other needs have been taken into account, including the increased demands for kindergarten teachers, and to some extent at least, the demand for additional teachers to staff Area Vocational schools.

#### Summary

Chapter VI has dealt with the problem of teacher supply in Oklahoma, both historic and future. The initial portion of the chapter treated the level of supply historically as estimated by the National Education Association and by the Oklahoma State Department

of Education. In addition, the matter of supply was treated in relation to degrees produced at Oklahoma colleges and universities. Following that, projections were made of Oklahoma college enrollments through the year 1977-78, together with the anticipated number of bachelor's degrees to be conferred by these institutions for the same period. Based on the latter projection, projections were then made of elementary and secondary teachers expected to be produced by Oklahoma institutions through 1977-78. The final portion of the chapter treated the relationship of anticipated supply to expected demand for elementary and secondary teachers in Oklahoma public schools for the decade of the 1970's.

In summary, it was found that Oklahoma public schools are already well supplied with more than a sufficient number of beginning teachers; this surplus can be expected to proliferate rapidly, even under current market conditions. In the event that the national market were closed off, Oklahoma would no longer be able to export its unemployment as in the past, and the problem would immediately grow to major proportions.

Several facts lead toward the conclusion that a substantial surplus of teachers is in the offing. Between 1967 and 1977, the number of bachelor's degrees conferred at Oklahoma colleges and universities should go up from 9,277 to 17,650, an increase of 90 per cent. The supply of teachers should increase accordingly, if past trends are any indication. In fact, if past trends are repeated, the number of teachers prepared will go up faster than total degrees. However, that assumption is not built into the projections being made in this study.



When it is considered that there is already a number of teachers being prepared in Oklahoma 60 to 90 per cent greater than is currently being consumed by the Oklahoma market, and that the production in the current decade is anticipated to increase by 90 per cent over the current level of production--and that the anticipated demand for new teachers is projected to remain at current levels--then the stage is set for substantial surpluses of teachers over the next decade. The anticipated surplus of elementary teachers is calculated to be on the order of 1,500 to 2,000 per year by 1977; and the surplus at the secondary level is anticipated to reach 4,900 to 5,400 per year by that time. However, these surpluses could go higher in the event that the national market were closed off suddenly, a not-too-unlikely occurrence. They could, however, be attenuated slightly by the emergence of a state-wide junior college system in Oklahoma, which would probably require some additional teachers over the demand levels anticipated here.

## CHAPTER VII

### FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Research into teacher supply and demand, though intriguing, is extremely complex and frequently frustrating. Although information concerning the production of teachers is adequate for most purposes, data on teacher utilization are incomplete at best, and are therefore subject to misinterpretation or manipulation. The size of the teaching force is a matter of record, but the size of the teacher reserve is an unknown quantity. Each year, untold thousands of teachers resign their jobs in the public schools; yet no one knows with any degree of accuracy how many of these teachers drop out of teaching, or how many simply move from one school district to another. Neither is it known how many experienced teachers move from the teaching reserve back into the active ranks each year. The lack of these data on a definitive scale make it extremely hazardous to engage in supply and demand research at the national level; therefore the conclusions to be presented below with regard to the national scene are more generalized than those which will be set forth later in connection with the Oklahoma portion of the study.

#### Conclusions on National Supply and Demand

Even though complete data at the national level are lacking, there is still a logical basis for drawing general conclusions about national teacher supply and demand. The point can be made, for example--in spite of feelings to the contrary--that there is no longer

a shortage of teachers in the United States. Rather, there is a surplus of trained teachers, although there are scattered shortages in some fields and in some geographic localities. There is, however, a heavy demand for beginning teachers just out of the colleges and universities, which creates the illusion of a shortage. This obscures the fact that there are thousands of qualified teachers not now actively engaged in the profession who, for one reason or another, are overlooked or ignored in most research dealing with supply and demand.

#### Secondary Education

In the field of secondary education, some 800,000 teachers were in the public classrooms in 1967-68, a number only slightly greater than the number of teachers trained by the colleges and universities over the past eight years. Since the median years of teaching experience in the schools was about eight years in 1967-68, logic would dictate that only about 400,000 of the 750,000 secondary teachers trained over the past eight years could have been engaged in secondary teaching in 1967-68, leaving some 350,000 teachers unaccounted for in that year. Most of them probably were in the teacher reserve, although it is possible that some may have switched into elementary teaching. The logical conclusion is that nearly one-half of all the teachers trained over the past eight years at the secondary level are not engaged in teaching at the present time.

In addition to the inactive secondary teachers referred to in the paragraph above, there is without question another inactive group--perhaps equally large or larger--who received their training nine, ten,

or even more years ago. At any rate, it can be estimated that upwards of 500,000 qualified individuals trained in secondary education are not now teaching in the nation's schools. Not all of these individuals would be available to teach in the event of a shortage, but a great many of them undoubtedly would serve if needed, or if wanted. It is this latter contingency which raises serious public policy questions concerning the utilization of trained professionals in the nation's manpower system.

#### Elementary Education

In elementary teaching, where shortages are believed to exist--and did exist until very recently--it is relatively plain that the shortages may soon be replaced by surpluses. Even during the decade 1957-1967, when severe shortages were alleged to have existed in elementary education, the profession was still able to pare the number of pupils-per-teacher from 29.1 to a figure of 26.7, while at the same time the percentage of elementary school teachers with less than a bachelor's degree was being reduced from 30 per cent to 8 per cent of the teaching force. These two factors could not have occurred simultaneously in the face of a critical shortage. Although there are still local shortages of elementary teachers, the national situation appears to have reached a state of equilibrium.

#### The Outlook for the Future

The outlook for the future calls for relatively stable student enrollments and a burgeoning number of college graduates. Those two things in combination should guarantee surpluses at both elementary

and secondary levels within the next three years. The number of elementary school students to be enrolled in the public schools should decline from 27.6 million in 1968 to about 25.1 million in 1976, a decrease of 2.5 million. At the secondary level, projections call for an increase from 17.2 million in 1968 to a total of 20.6 million in 1976, an increase of 3.4 million. Together, elementary and secondary enrollments should go up by approximately 1 million students during that total period, as compared with the previous decade's average increase of 1 million per year from 1957 through 1967.

With regard to teacher production, the output of elementary teachers should go up from about 77,000 to more than 140,000 during the period 1967-1977. When it is considered that the number of elementary students is due to decrease during that same period, the conclusion to be drawn is obvious, assuming that present trends with regard to teacher utilization continue. There is projected to be a surplus on the order of 65,000 to 70,000 beginning elementary teachers annually by 1977.

At the secondary level, the story is the same, only more so. Even though secondary enrollments are due to rise by 3.4 million from 1968 to 1977, the number of secondary teachers to be produced by the colleges and universities should rise from about 125,000 in 1967 to approximately 220,000 in 1977, a number which would be more than adequate to supply replacements for 1 million secondary teachers, and still leave a surplus of some 80,000 per year by 1977.

At this point the question might logically be asked, how is it that there is no teacher shortage, yet there is a demand for greater

and greater numbers of newly trained teachers from the colleges and universities each year? There are several possible answers to this question, which, though not obvious, are at least logical. The fact that there is an increasing demand for beginning teachers might suggest that there is a teacher shortage, but it might also suggest that public school administrators are systematically replacing experienced teachers with inexperienced ones in order to reduce operating costs. It is also plausible, and more charitable, to put forth the suggestion that administrators are increasingly unable to retain experienced teachers because of inadequate salary and working conditions in the public schools, and therefore find themselves forced to hire newly trained teachers out of necessity.

Whether or not administrators have systematically sought to move experienced teachers out of the system in favor of beginning teachers, or whether experienced teachers have simply been dropping out of the profession because of other reasons, cannot be determined on the basis of the current study. What can be determined is that there is indeed an increasing demand for beginning teachers, and that this demand is not brought about by a shortage of trained teachers. It may well be, however, that there is a shortage of trained teachers willing to teach. It may just as well be, on the other hand, that there is a substantial number of individuals in the teacher reserve who are both qualified and willing to teach, but who simply are unable to compete with beginning teachers for the available jobs. The data in the present study simply do not speak to these points.

## Recommendations and Needed Research

The conclusions reached thus far would suggest that the emphasis on research in teacher manpower should be shifted from teacher production, where the attention has been focused to this point, to teacher utilization, which has received almost no attention to date. A regular repeat of a study on teacher turnover is called for, along the lines laid out by Lindenfeld in his study a decade ago. With regard to teacher turnover, more emphasis should probably be given to teachers' reasons for leaving the profession than Lindenfeld was able to give in his research.

Statistics at the national level indicate that the teaching force is becoming younger, with the median years of teaching experience going down from thirteen years a decade ago to eight years today. Some of this reduction in median years of experience can be traced to growth in number of pupils, but there is also evidence to show that experienced teachers are being under-utilized for the reasons discussed above. In view of this fact, the profession might want to shift its emphasis from trying to attract young people into the profession to that of keeping its wisdom and experience from moving into other parts of the economy. One way in which this might be done would be for the profession to devote its energy to raising the level of maximum salaries, energy that has historically been expended in keeping a floor under beginning salaries. The latter action should not have been necessary in the first place, provided that a true shortage of teachers had really existed.

Another problem which needs some attention is the imbalance between the respective number of elementary and secondary teachers in training. Whereas research shows that the greatest relative needs currently are at the elementary level, the greatest number of teachers in training is at the secondary level. It might be well for the profession and the teacher-training institutions to consider the postponement of specialization by level until later in the professional sequence, in order that the supply of teachers at a given level might better be related to the market demand at a given time. A related problem concerns the current imbalance between the number of men and women in the teaching profession. Logic would suggest, although the current study has not treated this point, that the profession should intensify its efforts to attract more men into teaching at the elementary level. Currently only one teacher out of seven at the elementary level is a man. If young people learn both by precept and by example, then most grade-school boys are denied the opportunity to identify with and to learn through the example of male teachers in the present system.

Finally, because a number of signs point to the production of an increasing number of professionals in teacher education, a re-examination of current staffing patterns in elementary and secondary teaching is called for. Based on current levels and trends in teacher utilization, it would appear that a substantial surplus of teachers is in the offing. It may well be that the best possible direction for the profession and the public to take for the future would be to con-



tinue to reduce pupil-teacher ratios until they are on the order of 12-to-1. On the other hand, a better stance might be to move toward a differentiated staffing pattern whereby the number of professionals would be kept at current levels (on the order of 25-to-1), but the number of sub-professional personnel would be increased, following the example set by medicine and dentistry over the past few years. This problem is probably the most important public policy concern in the field of teacher manpower at the current moment in history, because it cuts across all of the areas of responsibility and concern in public elementary and secondary education.

In the event that the decision were made to hold the line on the number of professionals and to increase the number of sub-professional personnel in the public schools, this action would quickly trigger the need for a great number of other decisions by those in positions of public responsibility. Institutions of higher learning would immediately be called upon to re-examine their standards for admission to and retention in teacher education programs, as well as to develop new curricular patterns for education of the various new levels of teacher personnel. State Departments of Education would need to look to their certification standards, both at the professional and less-than-professional levels. The profession itself would inevitably be forced to review its admission and ethical standards and its procedures for enforcing those standards. Local school districts would find it necessary to develop new organizational and administrative patterns for operation of the new system, as well as to develop

new salary schedules based on differentiated staffing levels. All of the above, plus other actions and reactions could be expected to follow a basic public policy decision to abandon the present system of staffing in favor of a differentiated staffing system.

Although the conclusions and recommendations set forth above in connection with the national teacher manpower data are probably not exhaustive of those which the data might suggest, it is nevertheless felt that the items and issues treated here are the ones most appropriate to the overall aims and objectives of the study. It should be borne in mind that the major purpose of this study has been to suggest implications for public policy with regard to teacher production and utilization in Oklahoma. Therefore the remainder of this chapter will be devoted to that purpose.

#### Oklahoma Findings, Conclusions, and Projections

The section to follow will attempt to summarize the findings, conclusions, and projections coming out of the Oklahoma portion of this study. The items to be presented will be categorized by four types, namely those treating the current overall supply and demand picture in Oklahoma teacher education; those dealing with historical and projected enrollments in Oklahoma public elementary and secondary schools; those dealing with teacher turnover in the public schools; and those treating the employment of professionals in the public schools, both historical and projected.

## Current Supply and Demand in Oklahoma

1. Oklahoma produces elementary and secondary teachers at approximately twice the rate of the nation as a whole, while employing teachers at the same rate as the nation as a whole. Census figures reveal that Oklahoma's population currently represents 1.25 per cent of the national population. Oklahoma colleges and universities, however, confer approximately 2.5 per cent of the undergraduate teacher education degrees annually conferred by the nation's institutions of higher learning.
2. Approximately one-half of the degree production at the undergraduate level in Oklahoma higher education is devoted to the preparation of teachers. About one-third of the graduates major in formal programs of teacher education and a sizeable number of additional graduates meet teacher certification requirements while majoring in a subject other than teacher education.
3. Oklahoma currently ranks first in the nation with regard to the percentage of its elementary and secondary teachers holding a bachelor's or higher degree. In 1967-68, some 99.9 per cent of the State's elementary and 100 per cent of its secondary teachers held a bachelor's or higher degree.
4. Oklahoma is one of the few states in which the supply of both elementary and secondary teachers consistently outruns the demand. In 1966, it was reported by the National Education Association that Oklahoma was one of only seven states which produced a surplus of both elementary and secondary teachers.
5. In 1967-68, Oklahoma public elementary and secondary teachers received approximately \$1,400 below the national average in teachers' salaries, and from \$400 to \$1,200 below average salaries paid teachers in states surrounding Oklahoma, with the single exception of Arkansas.
6. The average number of pupils per classroom teacher in Oklahoma public schools currently stands at 24.4, and the average number of pupils per professional employee--including teachers, administrators and specialized personnel--currently stands at 22.1. Five years ago the average number of pupils per classroom teacher was 26.9, and the average number per profes-

sional employee was 24.7. It is projected that by 1977, the pupil-teacher ratio in Oklahoma will be 22-to-1, and the pupil-professional employee ratio will be 19-to-1.

#### Enrollments in Oklahoma Public Schools

7. The number of pupils enrolled in kindergarten and pre-kindergarten programs in Oklahoma public schools will increase from about 26,000 in 1968-69 to more than 43,500 by the 1970-71 school year. Following that, the number of annual kindergarten enrollments will approximate 100 per cent of births five years earlier.

8. Enrollment of first-grade pupils in Oklahoma public schools will decline from about 56,000 in 1967 to 46,500 in 1977, occasioned by a decrease in the number of births in Oklahoma from 50,859 in 1961 to an estimated 40,500 in 1968, the latest year for which birth statistics are available.

9. Elementary enrollments (grades 1 through 6) in Oklahoma's public schools will decrease substantially over the decade 1967-1977, going down from 313,000 in 1967-68 to a figure of 252,000 in 1977-78, a decrease of 20 per cent for the decade projected. By contrast, elementary enrollments went up from 279,000 in 1956-57 to 312,000 in 1966-67, an increase of approximately 12 per cent for the decade.

10. Secondary enrollments (grades 7 through 12) should remain relatively stable over the decade 1967-1977, declining from a beginning figure of 278,000 to a period-ending figure of 276,000. Between now and 1973-74, however, there should be a moderate increase. By comparison, secondary enrollments went up from 214,000 in 1956-57 to about 273,000 in 1966-67, an increase of 27 per cent.

11. Total enrollment in Oklahoma's public elementary and secondary schools will decline from approximately 620,000 in 1967-68 to about 580,000 in 1977-78, a projected decrease of 40,000 for the decade. Over the previous decade, enrollment in these same schools increased by more than 100,000, going from approximately 507,000 in 1957 to 612,000 in 1967.

## Teacher Turnover and Attrition Ratios

12. Current figures show that Oklahoma is poorly utilizing its trained manpower in teacher education. Only about half of those trained in Oklahoma colleges and universities begin teaching in Oklahoma. Of those who teach, about 20 per cent are lost after one year, 30 per cent are lost after four years, and approximately 50 per cent are lost after ten years. Thus, only about 250 per 1,000 teachers trained in Oklahoma colleges and universities are still teaching in Oklahoma after ten years.

13. Oklahoma's public schools suffer an annual turnover of teaching personnel equal to one out of every five teachers. In the latest year for which statistics are available, some 5,645 teachers resigned their positions, out of a total of 27,062 professional employees on school district payrolls in that same year.

14. Net turnover (that portion of the previous year's turnover which must be replaced by beginning teachers) currently stands at 6.5 per cent of the total teaching force. Thus there was a net loss of slightly more than 1,800 teachers who resigned their positions in the Oklahoma public schools in 1968 who did not re-enter teaching in Oklahoma in 1968-69. It is projected that by 1977, net turnover will be equivalent to 9.0 per cent of the teaching force annually.

15. The teaching force in Oklahoma public schools has grown collectively younger through the past few years. Between 1962-63 and 1968-69, the median years of teaching experience for Oklahoma teachers went down from 15.2 years to 10.7 years. This situation has occurred because the number of beginning teachers has increased faster than total teachers, and at a rate well above the increase in pupil growth.

## Professional Employees for the Public Schools

16. Between 1957 and 1967, the number of professional employees in Oklahoma public elementary and secondary schools increased by approximately 6,500, going from 20,683 at the beginning of the decade to 27,062 at the end. Forecasts for the decade 1967-1977 indicate only a moderate increase of 2,500,

with total teachers projected to rise from a figure of 27,979 in 1967-68 to approximately 30,500 by 1977-78.

17. The number of bachelor's and first professional degrees conferred by Oklahoma colleges and universities should move upward from 9,958 in 1967-68 to a total of 18,700 in 1977-78, a projected increase of 81 per cent for the decade. Provided that recent trends continue, the number of teachers produced by these institutions during that period can be expected to increase on the same order.

18. It is estimated that Oklahoma administrators will need to recruit from 6,500 to 7,000 teachers annually between now and 1977-78, in order to fill the total number of positions expected to be vacant as a result of resignations and new positions added. Of the total number of positions to be filled, it is expected that about 60 per cent will be filled from the pool of experienced teachers, and 40 per cent will come from the flow of beginning teachers produced by the state's colleges and universities.

19. The number of classroom teachers employed by Oklahoma public schools should increase by some 1,200 between 1967 and 1977, even though the number of pupils enrolled in the public schools will decrease by about 40,000 during that period. The number of elementary teachers should decline over the next ten years, but that decrease should be more than counter-balanced at the secondary, kindergarten, and special education levels, where moderate increases are expected to occur.

20. The supply of elementary teachers projected to be produced by Oklahoma's teacher-training institutions will soar from an estimated 1,400 to 1,700 in 1967 to a range of 2,600 to 3,100 in 1977. During that same period, the demand for beginning elementary teachers is expected to be on the order of 1,000 to 1,200 per year, leaving a projected surplus of 1,500 to 2,000 per year by the year 1977.

21. The supply of secondary teachers expected to be produced by Oklahoma's teacher-training institutions will move upward from approximately 2,800--3,000 in 1968 to a range from 4,900 to 5,400 by 1977. During the same period, the outlook is for demand to reach 1,200 to 1,450 annually, leaving a projected surplus of secondary teachers of from 3,600 to 4,000 per year by 1977.

22. The greatest increases in professional employment by Oklahoma public school districts between 1967 and 1977 should occur among specialized personnel such as counselors, librarians, school nurses, supervisors, and the like. The number of these specialized personnel (including administrators) should increase from about 2,500 in 1967 to more than 3,800 by 1977.

Two general conclusions can be drawn from the score of specific items listed above. First, Oklahoma will have a substantial surplus of teachers within the next two or three years, a surplus which will reach major proportions by the middle of the 1970's. The reasons are obvious even to an untrained observer. Following a decade in which the number of pupils in Oklahoma's public schools increased by more than 100,000, there will be a decrease in public school enrollments over the next decade. The number of teachers to be needed over the next few years will be relatively stable, since even the number presently employed will be sufficient to reduce pupil-teacher ratios without adding a single professional between now and 1977. Thus the only teachers to be needed will be to replace those lost through attrition. Also, the production of teachers by the state's colleges and universities will continue upward, increasing by at least 80 per cent over present levels by the end of the 1970's. It is almost certain that there will be a surplus on the order of 4,000 to 6,000 teachers annually by the year 1977, assuming the continuation of present trends.

A second general conclusion which emerges from the data above is that Oklahoma is poorly utilizing its trained manpower in teacher education. Only one teacher out of four trained in Oklahoma colleges a decade ago is still teaching in Oklahoma. Gross turnover among

teachers exceeds 20 per cent annually, and net turnover is increasing each year. Experienced teachers are leaving the profession at higher rates each year, either of their own volition, or because they are being driven out of the market by the hordes of beginning teachers coming out of the colleges and universities annually.

Obviously, Oklahoma is able to attract good teachers, even though its average salaries are below those of other states, since the educational qualifications of Oklahoma teachers are the highest in the nation. It is just as obvious, however, that most of these teachers do not long remain in Oklahoma to teach. Whether or not school administrators are discarding experienced teachers in favor of beginning teachers in order to reduce operating costs, or whether teachers are leaving the profession in Oklahoma to seek employment in other sectors of the economy, cannot be determined. The fact remains, however, that Oklahoma is currently required to train four teachers in order to guarantee that one will still be available ten years hence.

A third general conclusion which can be drawn at this point, although not explicitly from the data above, is that there is a need for better data and additional research with regard to teacher manpower, and the accomplishment of this additional research might require some restructuring in parts of the teacher education system. For example, there is a need to know what happens to all of the teacher education graduates from the colleges and universities in Oklahoma each year, but there is now no accurate mechanism by which we can even find out how many graduates there are, much less what happens to them. Also, it would be helpful if data on teacher turnover could be gathered



and reported with a greater degree of specificity, in order that it could be learned at what level and in what subject-fields teacher turnover is occurring. Also, there is a need to discover something about the qualitative characteristics of those now teaching in the public schools, and to know something about the relative quality of those who remain in Oklahoma vis-à-vis those who migrate elsewhere. These are only examples of research for which there is a current need. The recommendations section to follow will be more specific with regard to what kind of research is needed and how this research might be accomplished.

#### Recommendations

1. It is recommended that Oklahoma move as quickly as possible to bring its teacher supply and demand at the elementary and secondary levels into reasonable conformity.

Projections indicate that the number of elementary and secondary teachers to be trained in Oklahoma over the next decade will exceed the demand for teachers by a substantial margin. Therefore, if the state is to make the best possible utilization of its manpower resources and avoid a wholesale exodus of trained personnel to other states, supply and demand must be brought into reasonable harmony. This might be accomplished through a variety of measures, the least complicated of which might simply be to let the free market operate, in which system the market price for teachers would be determined by the relative abundance or scarcity of teaching talent. A second possibility would be to increase the demand for teachers by such means as substantially reducing pupil-teacher ratios (perhaps to the order

of 12-to-1), or by lowering the school age to four or perhaps three years. A third possibility would be to reduce the number of potential teachers through raising the standards for admission to teacher education programs, or by lifting certification requirements above current levels. Still a fourth possibility might be to cut back on the number of professional personnel to be trained, but expand the number of auxiliary personnel, thereby utilizing a greater number of individuals, but reducing the amount of resources to be expended in comparison with other alternatives.

Currently, the market in which Oklahoma teachers compete is a controlled or managed market: that is, there is a number of inhibiting factors which keep it from being free. For example, there is a floor under beginning salaries to keep them from falling below a minimum level, even when there is a surplus of teachers. Nor does the market price always rise during a time of shortage. Sometimes the job qualifications are lowered to avoid paying the market price, as is the case when substandard teaching certificates are issued in fields such as elementary education, at which level there is no shortage in Oklahoma. Also, there is a practical ceiling beyond which salaries seldom rise, regardless of the quality of performance or years of service, which situation tends to inhibit the retention of ambitious and talented individuals. Provided that the state were to let the free market operate in supply and demand, it would be necessary to differentiate salaries by subject-field, and perhaps in other respects as well, since it would probably not be economically feasible to pay every teacher of the same education and experience at the rate

necessary to secure the scarcest skills needed at any given time. Based on past performances of both the organized profession and the state government, it is highly unlikely that a free market will be established with respect to teacher supply and demand in Oklahoma, even though that public policy alternative might well be the best and least expensive in the long run.

The second alternative mentioned in connection with Recommendation 1 is that of increasing the teacher demand to the level necessary to conform with the projected supply. Provided that the pupil-teacher ratio in Oklahoma were cut in half, the number of teachers would double, moving upward from the current number of 30,000 to about 60,000 by the end of the 1970's. Also, the school age could be lowered from five to four or three, which would call for the addition of a few thousand more teachers. This would probably take care of the projected supply of teachers from the colleges and universities, but it would also require a tripling of funds for public education over present expenditures by the year 1977, a highly questionable and unlikely prospect. That alternative is therefore rejected as a viable possibility for Oklahoma, regardless of how desirable the prospect of drastically reduced pupil-teacher ratios might be.

The third public policy alternative mentioned above, that of reducing the number of prospective teachers to accord with the projected demand, could be accomplished either by making it more difficult to get into a teacher education program at colleges and universities, or by raising the licensure requirements at the state level, or both. If it were decided that institutions should cut down on the

number of teachers being produced, then each institution could be assigned a quota, or admission and retention standards could be made uniformly higher at all institutions alike. This latter possibility would presently discriminate in favor of the state universities and the private institutions, since the aptitude and achievement levels of students in those institutions are relatively higher than those in the state four-year colleges. If the decision were made to limit input at the state licensure level, then a standardized test might be administered as in law or nursing, or the present standards for certification might be raised to require a greater number of years for completion.

In the past, the raising of certification standards is the principal measure that has been used to hold down the surplus of teachers in Oklahoma, a measure which has also served to lift the quality of the profession. A disadvantage of using certification as a weeding-out device, however, is that it tends to weed out both the undesirable and the greatly desirable alike, so that it has definite limitations as a control measure. It is therefore doubtful whether certification alone should be used to limit access to the profession, in case the public policy decision were made to do so.

The fourth policy alternative listed above, that of differentiated staffing, is designed to increase the number of individuals in contact with students, without at the same time increasing the level of expenditures by the amount necessary were these individuals all trained at the professional level. In a differentiated staffing

pattern, there would be two, three, or perhaps more levels of instructional personnel in a school district.

A typical differentiated staffing pattern might be composed of a master teacher with sixty hours beyond the baccalaureate and ten years of experience, an intern teacher trained at the baccalaureate level, and a teacher aide with two years of collegiate training. These personnel in combination might be responsible for a group of forty-eight students, which group might be treated in modular units of forty-eight, twenty-four, or sixteen, depending upon the type of activity. The master teacher would be responsible for the teaching team, and would be salaried at a level perhaps twice that of the baccalaureate teacher, who would in turn receive a salary twice that of the teacher aide. In such an arrangement, it might be possible for each of the team members to move up the ladder and reach the top rung in the organizational pattern, and the certification standards at the state level might well be constructed with that kind of escalation in mind. Such a pattern has recently been developed by Massachusetts, which state pioneered in the original certification movement, and which may well now have developed the pattern for the future.

Under a differentiated staffing plan, the number of professionals would be limited, but the number of allied personnel would be increased, thus serving to put more personnel into the instructional process, while at the same time holding overall costs below what they would be were the total personnel trained at the professional level. This approach would call for a major overhaul of the present system

of recruitment, training, certification, utilization, and funding arrangements. In addition, it would undoubtedly require a significant increase in expenditures for the public schools. This latter solution to the problem appears to be the one which will ultimately be adopted by most states, however, if the kind of program envisioned by the Education Professions Development Act comes to fruition. That program provides funds to assist institutions and school systems to train teacher aides and other less-than-professional personnel, which programs--if successful--will help to establish differentiated staffing patterns in public school systems over the country.

2. It is recommended that a teacher registry be created in the Oklahoma State Department of Education to establish and maintain up-to-date information about the number and characteristics of teachers employed in the state's elementary and secondary schools, as well as those individuals currently eligible for certification as Oklahoma public school teachers.

The Oklahoma State Department of Education currently gathers and publishes several kinds of data in the field of teacher manpower and utilization. These data, though far better than that collected nationally, still leave much to be desired in terms of their systematic collection, integration, and dissemination. The colleges and universities in Oklahoma are asked to report annually on all their graduating students eligible for teaching certificates, but there is sometimes a lack of accuracy in those data. Another report dealing with teacher personnel employed by the public schools annually surveys all of the school districts in the state to ascertain the total number of professionals on the payroll, breaking this number down by academic level

and by salary paid. That report does not, however, categorize teachers by sex, nor does it break down secondary teachers by subject-matter field. A third report on teacher turnover indicates how many teachers annually terminate their contracts in school districts across the state, but does not provide specific breakdowns to allow judgments to be made concerning level, sex, subject-matter field, and other such items. A fourth report annually gathers data on the number of years of teaching experience each individual employed in the public schools has to his credit, which is helpful in making gross judgments with regard to how many teachers who were graduated from Oklahoma institutions ten years ago are still teaching in Oklahoma this year. These are gross data, however, and do not tell how many individuals--nor which individuals--who taught in Oklahoma last year are still teaching in Oklahoma this year. In short, while there is much valuable data in the files of the State Department of Education, there are additional needs for data still unfulfilled.

What is needed at this point--if Oklahoma is to relate its teacher supply and demand in a meaningful way--is a new division in the Oklahoma State Department of Education, the Division of Teacher Registration and Certification. That division would build a computer file on each new teacher trained by colleges and universities of Oklahoma, listing such characteristics as teaching level, field of specialization, sex, and other salient information items. Also, similar data would be collected from teachers currently employed in the public schools, as well as those eligible to teach in Oklahoma but who are currently inactive. Such a computer file, based on Social Security

numbers, would enable the state to keep accurate statistics on the number and teaching field of those being trained, as well as the number and characteristics of those in the ready reserve. The file could serve as a placement service for teachers and as an employment service for school administrators, in addition to its value as a research tool.

3. It is recommended that the issuance of less-than-Standard teaching certificates to elementary and secondary teachers in Oklahoma public schools be terminated as soon as possible.

In a state which produces a surplus of teachers and which exports a sizeable quantity of teachers annually, the practice of allowing individuals with sub-standard credentials to teach in the public schools would not appear to be in the best interests of either the profession or the quality of the instructional program in the schools. The employment of an unqualified person not only lowers the quality of the instructional program in a school district, but deprives a qualified person living elsewhere within the state of an opportunity to practice his profession. In addition, such a practice may actually be a disservice to the individual hired without being properly prepared, since it may prevent his going back to an institution of higher learning to prepare himself for Standard certification.

Statistics from the State Department of Education reveal that in 1966-67, the number of less-than Standard teaching certificates issued in Oklahoma equaled 50 per cent of the Standard certificates issued. In that year, there were approximately 7,000 Standard, 2,000 Provisional, and about 1,550 Temporary credentials processed by the State Department of Education.



The continuation of the practice of issuing less-than-Standard certificates may also help to perpetuate the existence of non-viable school districts, since it is in these kinds of districts that the practice is most likely to flourish. The attenuation of this practice is thus likely to accelerate the development of more viable school districts, as well as to raise the level of professional pride among practitioners in general. A state which has both the highest per capita production and the highest educational standards in the nation should be providing leadership in teacher education. The abolition of less-than-Standard credentials would be a good way to provide that professional leadership.

4. It is recommended that a cooperative study be undertaken by the various agencies having responsibility in the areas of teacher production and utilization, with a view toward the clarification of the respective roles of the agencies involved, and the development of a long-range plan for the best possible utilization of the state's manpower resources.

There is at present no clear-cut strategy with regard to the policy that might be adopted in Oklahoma in the event of an acknowledged surplus of teachers nationally. Oklahoma-trained teachers would then be unable to find employment, and would thus be thrown back upon the resources of the state to undergo retraining or to find employment in some other sector of the economy. Logic would dictate that long-range planning go forward now to forestall such an occurrence. Currently, however, no single agency or organization is charged with the responsibility for planning in teacher production and utilization. Instead, the higher education component of state government bears the

chief responsibility for production, and the public schools of the state consume whatever portion of that production is needed or desired. At present, little or no formal communication exists designed to relate the kind of teachers produced to the needs of the consumer.

What appears to be needed is a forum wherein all of the agencies involved in teacher education can get together for planning purposes. Such a forum might be initiated by any one of the agencies involved, or held under the aegis of an external agency such as the 30-member commission on education newly created by the 1969 Oklahoma Legislature.

5. It is recommended that those responsible for teacher utilization in Oklahoma give special attention to the problem of attrition on the part of experienced teachers, in order that better use might be made of the trained manpower available within the state.

Statistics indicate that only one teacher out of four trained in Oklahoma colleges and universities ten years ago is still teaching in Oklahoma public schools. What has happened to the remainder is unknown. It can be assumed, however, that many of those graduated ten years ago are now involved in teaching elsewhere. Others no doubt have left the profession to seek a place in some other sector of the economy. Still others have retired from teaching in order to raise a family, and will subsequently return. Others may perhaps be seeking to return to active status, but are unable to find suitable employment.

Regardless of the reasons for departure from teaching in Oklahoma, the loss of some 75 per cent of those trained a decade ago is a serious blow to the state and to the organized profession. Were the same attrition ratios to be suffered by a profession such as medicine,

there would be a public outcry of serious proportions. The outcry should be no less great in public education. No doubt one reason for the high attrition rates in teaching is the restricted range between the minimum and maximum salary levels. In order that the best teachers might be retained, the maximum salary should probably be in the range of two to two-and-a-half times the minimum salary. The organized profession, the Legislature, and local school districts alike should be concerned with solutions to this problem, since no professionalism of consequence can occur in teaching until its wisdom and experience are prevented from being systematically siphoned off to other parts of the economy.

6. It is recommended that additional research in the area of teacher supply and demand be devoted to a qualitative study of teacher production and utilization, in order that a determination might be made of the kinds of individuals attracted and retained in teacher education as compared with those attracted by other occupations and professions. It is further recommended that additional research be undertaken which would determine manpower needs in greater detail than the current research has attempted, in order that both students and institutions have access to counseling data about the specific needs of the public schools for trained manpower.

This study has dealt almost exclusively with the quantitative aspects of supply and demand, and has thus neglected the qualitative dimensions of the problem. Although there is some evidence by which to measure the aptitude and achievement of teacher education graduates at the time of their graduation from college, there is little or no research available to reveal what kinds of teachers remain in the profession, and what kind depart it. A study which would undertake this type of research could make a contribution to teacher education.

Another study which needs to be undertaken on a continuing basis is one which would seek to determine the needs of the public schools for teachers by subject-matter field. The current study has been confined to an overall look at manpower needs, and so did not touch upon that aspect of the manpower problem. If students are to make judgments about career fields on any basis other than hearsay, then they need to have access to up-to-date supply and demand figures on a field-by-field, year-by-year schedule. That kind of research should most appropriately be done by the State Department of Education as a part of its regular data-gathering and reporting service.

#### Conclusion

It is hoped that this study of teacher supply and demand will prove helpful to those responsible for the production and utilization of teachers in Oklahoma, and that the alternatives for the development of public policy with regard to teacher manpower will help to bring about a closer relationship between supply and demand for the decade of the 1970's. If the current research can help to prevent the surpluses and avoid the kinds of imbalances projected for Oklahoma over the coming decade, then it will have achieved its most important purpose.

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