

Supply and Demand Projections for School Principals and Assistant Principals in North Carolina

2000-01



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Highlights: Supply and Demand of Principals and Assistant Principals

1. During this decade, the annual number of additional principals and assistant principals needed is projected to increase from 525 to 564 per year, or from 607 to 656, depending upon whether turnover rates remain at their 1999-2000 record value of 11.51 percent or return to their five-year average value of 9.67 percent. In either case, the demand for additional principals and assistant principals will continue to increase, but at a somewhat slower pace than projected public school enrollments.
2. The number of graduates in North Carolina's Master of School Administration (MSA) programs is projected to increase by 70 percent over this same period of time. This does not necessarily mean that a surplus of graduates is likely, because the projected number of graduates during each year of the projection period will fall short of the projected number of new hires. This is because a growing proportion of new hires in the last five years has come from the pool of new graduates, and this trend is expected to continue.
3. There is some evidence that the market for new principals and assistant principals has tightened somewhat over the past five years, as position vacancies have far outstripped annual degree production. However, large increases in degree production are expected to address this temporary tightness.
4. Additional evidence that the market has tightened comes from the data on persons licensed to work as principals or assistant principals in the public schools, but who choose not to do so. The size of this group (known as "the reserve pool") has decreased in the past five years but appears to have stabilized at a level of between 2500 and 3000 persons.
5. Given the size of the reserve pool and the projections of large numbers of new graduates, **this report concludes that no shortage of principals or assistant principals is likely to occur statewide in the next decade**, although some local shortages are likely until extended learning programs can increase degree production in those localities.
6. Among UNC institutions, minority representation in MSA programs over the past five year has increased from 12.4 percent of total enrollment in 1995-96 to 29.8 percent of total enrollment in 2000-01.

Background

This report contains updated projections of the demand for, and supply of, school principals and assistant principals in North Carolina through the academic year 2009-10. It is prepared in response to House Bill 257, 1993 Session Laws (GS 116.74.21).

The purpose of the report is to monitor the conditions affecting the future demand for school principals and assistant principals in order to forecast the number of graduates that colleges and universities will need to produce in their Master of School Administration (MSA) programs. Prior to 1994-95 there were 14 master's degree programs in educational administration in North Carolina: 12 at UNC institutions and two at private institutions. Legislation in 1993 reduced the number of UNC institutions offering MSA programs to seven, and directed that these surviving programs be wholly restructured to conform to raised standards required by the legislation. A 1995 amendment to the 1993 legislation directed that an eighth program be started in 1995-96 at Appalachian State University and another amendment in 1998 established a ninth program at North Carolina State University, which began in the fall of 1999. UNC institutions with old master's degree programs and "certification only" programs in educational administration were directed to discontinue accepting any new students in 1994-95. Few, if any, "grand-fathered" students remain in these programs and they are no longer a significant source of new supply. In addition to the programs at UNC institutions, MSA programs at Campbell University and Gardner Webb produce about 35 graduates per year, roughly 10 percent of the state's current annual production.

Coincident with the advent of the new programs in school administration was a new program of state-funded fellowships, worth \$20,000 per year for recipients who fulfilled their obligation to work in a North Carolina public school as a principal or an assistant principal within six years of graduation. Named the Principal Fellows Program (PFP), it received initial funding in 1994-95, enough to support 39 fellows in its first class. By the fall of 2000, there were 183 enrolled students receiving support from the program; during the fall of 2000 and the spring of 2001, there were 99 graduates in the program. Although there is some variation in year-to-year totals, it is expected that roughly half of enrolled principal fellows will graduate each year since the program of study is full-time and lasts two years. At the present level of funding, therefore, the program should produce approximately 90 graduates per year, which accounts for approximately one fourth of the state's current annual production.

The combination of the Principal Fellows Program and the restructured MSA curriculum and admissions requirements has led to the production of graduates whose academic credentials and training have both improved. While these improvements in program quality are important to the strength of the public schools, they also relate indirectly to the analysis of supply and demand. By reducing the number of degree programs and enrollment in the programs, the restructured MSA programs led to a reduced annual production and more limited supply during the mid-90s than had heretofore existed. And to the extent that the new MSA graduates were perceived by hiring schools as better-trained candidates, the demand for them would be stronger than for other candidates. Taken together, these changes in program quality may have led to a perception of shortage that will diminish as the new MSA programs mature and expand.

Conditions Affecting Demand

Table 1 presents updated historical data on the number of full-time principals and assistant principals employed in North Carolina's public schools, final Average Daily Membership (ADM) in the public schools, and the number of public schools in the State.

Table 1. Full-Time Principals and Assistant Principals Employed in NC Public Schools, Past and Projected

Year	Principals	Assistant Principals	Total	Ratio Assistants to Principals	Number of NC Public Schools	Final ADM	Schools per 1000 ADM
1990-91	1,949	1,702	3,651	0.873	1,959	1,070,297	1.830
1991-92	1,937	1,793	3,730	0.926	1,946	1,080,223	1.801
1992-93	1,944	1,851	3,795	0.952	1,948	1,093,683	1.781
1993-94	1,941	1,882	3,823	0.970	1,956	1,108,625	1.764
1994-95	1,953	1,821	3,774	0.932	1,969	1,131,090	1.741
1995-96	1,982	1,895	3,877	0.956	1,984	1,156,885	1.715
1996-97	1,996	1,950	3,946	0.977	2,002	1,183,335	1.692
1997-98	1,986	2,137	4,123	1.076	2,024	1,203,912	1.681
1998-99	2,043	2,236	4,279	1.094	2,042	1,221,746	1.671
1999-00	2,070	2,348	4,418	1.134	2,079	1,237,794	1.680
2000-01	2,100	2,386	4,486	1.136	2,111	1,252,815	1.685
2001-02	2,120	2,444	4,564	1.153	2,120	1,269,335	1.670
2002-03	2,130	2,492	4,622	1.170	2,130	1,287,238	1.655
2003-04	2,145	2,546	4,691	1.187	2,145	1,307,630	1.640
2004-05	2,161	2,602	4,763	1.204	2,161	1,329,555	1.625
2005-06	2,174	2,654	4,828	1.221	2,174	1,350,100	1.610
2006-07	2,183	2,703	4,886	1.238	2,183	1,368,768	1.595
2007-08	2,190	2,748	4,938	1.255	2,190	1,385,788	1.580
2008-09	2,195	2,792	4,987	1.272	2,195	1,402,653	1.565
2009-10	2,202	2,838	5,040	1.289	2,202	1,420,692	1.550

Note: Numbers below the line are projected values; numbers above are actual values. All data in this table exclude charter schools. In 2000-01, there were 90 charter schools that enrolled.

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From these historical data, projected numbers of principals and assistant principals for the years 2001-02 through 2009-10 are derived. The derivations are based on extrapolations of two data series: 1) the ratio of the number of public schools to final ADM (in thousands) in each year; and 2) the ratio of assistant principals to principals in North Carolina's public schools. The steps in the calculation are straightforward. First, project the number of schools by multiplying the projected enrollment by the projected number of schools per thousand enrolled; second, set projected number of principals equal to the projected number of schools; third, project the number of assistant principals by multiplying the project number of principals by the projected ratio of assistant principals to principals; fourth combine the projected number of principals and assistant principals to determine the projected staffing levels for both groups of school administrators. It should be noted that all data in Table 1 exclude charter schools and private schools. Their contribution to the demand for principals

and assistant principals is shown in Table 3 on p. 5. Projection of final ADM are spring 2001 preliminary projections prepared by the North Carolina Department of Public Instruction.

The number of schools per thousand ADM has been declining in North Carolina over the past decade as schools have increased in size due to new school design standards and to enrollment growth having been somewhat higher in the upper grades than in the lower grades. This trend alone would tend to cause the demand for new principals to grow more slowly than enrollment in the future since the number of principals is equal to the number of schools. However, larger schools tend to hire more assistant principals than smaller ones, and thus the demand for assistant principals may grow faster than the growth of schools and the growth in enrollment. The combined effect of these two factors requires that the ratio of schools to ADM and the ratio of assistant principals to principals be separately projected, as shown in Table 1. The total numbers of principals and assistant principals that result from these projections are shown in the third column of Table 1.

Projected changes in the annual number of these positions represent one source of jobs for newly hired principals and assistant principals. These changes are shown under the first column (entitled “Staffing Level Change”) of Table 2. The other source of positions for newly hired principals and assistant principals is replacements for those who leave their positions each year due to death, retirement, disability, or resignation, i.e., turnover. To estimate the replacement demand for principals and assistant principals, a projected annual turnover rate of 9.67 percent (the average for the most recent five years) was applied to the number of principals and assistant principals in each previous year of the projection period. The resulting number of new hires is presented in Table 2 under the column entitled “Replacement.” The projected number of new hires is equal to the sum of those due to staffing level changes and those due to turnover.

Table 2. Projected New Hires of Public School Principals and Assistant Principals in North Carolina, 2000-01 through 2009-10

Year	Based on 5-yr Average Turnover Rate = 9.67			Based on 1999-00 Turnover Rate = 11.51		
	Staffing Level Change	Replacement	Total	Staffing Level Change	Replacement	Total
2000-01	68	427	495	68	509	577
2001-02	78	434	512	78	516	594
2002-03	58	441	499	58	525	583
2003-04	69	447	516	69	532	601
2004-05	72	454	526	72	540	612
2005-06	65	461	526	65	548	613
2006-07	58	467	525	58	556	614
2007-08	52	472	524	52	562	614
2008-09	49	478	527	49	568	617
2009-10	53	482	535	53	574	627

Note: All data in this table exclude charter schools.

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The turnover rate has been increasing over the past five years. The most recent year’s data show that 11.51 percent of principals and assistant principals in the public schools left their positions and did not take another principal or assistant principal position in another

public school in North Carolina. If one assumed that turnover would stay at this high level in future years, the impact on replacement demand would be substantial, since each percentage point increase in the turnover rate means that an additional 45 persons will need to be hired. The impact is shown on the right side of Table 2. The two “Total” columns of Table 2 represent a low and high estimate of future demand for the North Carolina public schools.

Another source of demand for principals is charter and private schools. Although principals in these schools need not be licensed by the State, it is estimated that a third of the principals in these schools are licensed and trained in traditional school administration programs. This estimate is based on conversations with officials who oversee data collection of both groups of schools. These officials also suggest that these schools generally do not employ assistant principals. Therefore, the projection of trained and licensed principals for these schools is similar to that used with the public schools. The calculations are shown in Table 3.

Table 3. Principals at Private and Charter Schools: Past and Projected

Year	Private Schools	Charter Schools*	Total Principals	New Positions	Turnover	New Hires	New Hires with State License**
1990-91	463	0	463	-6	39	33	11
1991-92	471	0	471	8	38	46	15
1992-93	484	0	484	13	39	52	17
1993-94	504	0	504	20	40	60	20
1994-95	518	0	518	14	42	56	19
1995-96	545	0	545	27	43	70	23
1996-97	568	0	568	23	45	68	23
1997-98	592	34	626	58	47	105	35
1998-99	626	59	685	59	52	111	37
1999-00	644	78	722	37	64	101	34
2000-01	654	90	744	22	67	89	30
2001-02	664	100	764	20	69	89	30
2002-03	674	100	774	10	71	81	27
2003-04	684	100	784	10	72	82	27
2004-05	694	100	794	10	73	83	28
2005-06	704	100	804	10	74	84	28
2006-07	714	100	814	10	75	85	28
2007-08	724	100	824	10	76	86	29
2008-09	734	100	834	10	77	87	29
2009-10	744	100	844	10	78	88	29

* The maximum number of charter schools is currently set at 100 by law.

** Calculation assumes that one-third of new hires will hold a state license.

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The projections in Table 3 are based on an assumption that the cap on the number of charter schools will remain at 100. Since the current number has not yet reached the cap and the proportion of principals that are licensed in these schools is only about one third, it is unlikely that the removal of the cap would have an appreciable effect on the number of licensed principals needed by these schools. By adding the projected numbers of newly hired

licensed principals in Table 3 to the projected numbers shown in Table 2, two projections of statewide demand are derived. They are shown in Table 4 and may be viewed as a low and a high projection of demand.

Table 4. Projected New Hires of Principals and Assistant Principals in North Carolina, 2000-01 through 2009-10

Year	Based on 5-yr Average Turnover Rate = 9.67	Based on 1999-2000 Turnover Rate = 11.51
	2000-01	525
2001-02	542	624
2002-03	526	610
2003-04	543	628
2004-05	554	640
2005-06	554	641
2006-07	553	642
2007-08	553	643
2008-09	556	646
2009-10	564	656

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Conditions Affecting Supply

Candidates to fill annual vacancies are drawn from two sources: 1) new graduates of North Carolina's MSA programs; 2) past graduates of master's degree programs in school/educational administration not already employed by a North Carolina public school as a principal or assistant principal. Those in the second group are referred to as "the reserve pool."

Those in the first group are those who complete MSA programs in the nine UNC institutions and two private institutions that offer these programs. Table 5 shows the

Table 5. Degrees Conferred in MSA Programs, by Institution

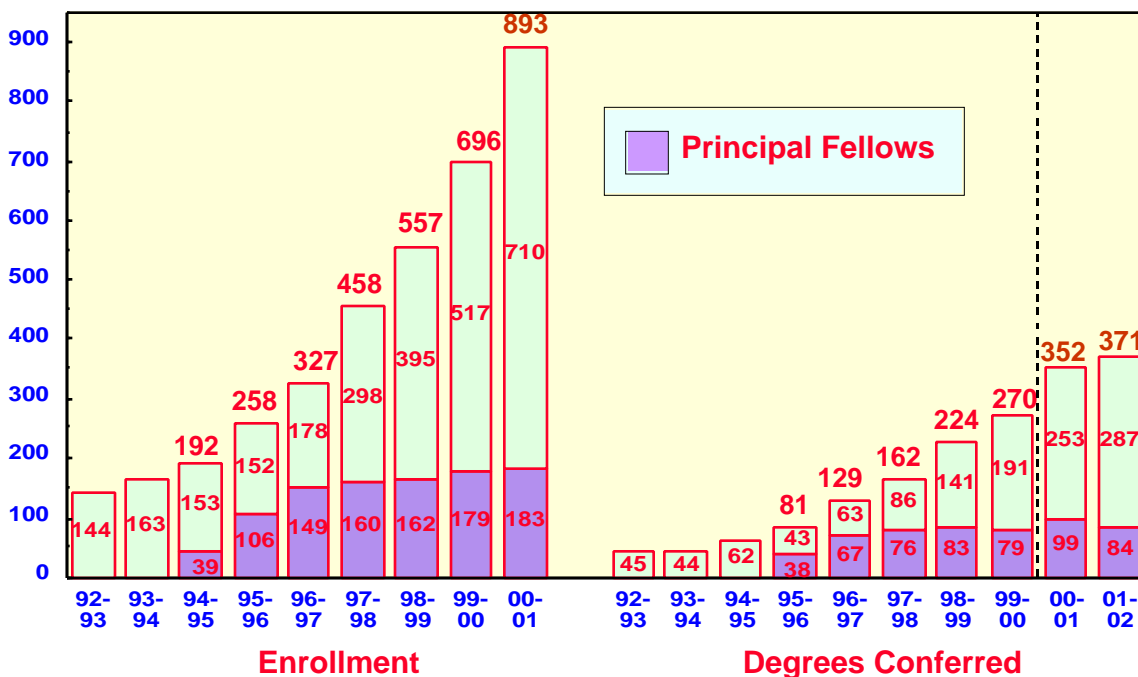
Institution	Year				
	Actual	Estimated		Projected	
	1999-2000	2000-01	2001-02	2002-03	2003-04
ASU	44	45	15	30	45
ECU	71	82	100	100	100
FSU	13	25	21	25	25
NCSU	--	55	69	70	70
UNC-CH	17	21	15	25	40
UNCC	41	39	46	45	45
UNCG	38	30	35	35	35
UNCW	7	10	15	15	15
WCU	12	15	15	25	25
Private	27	30	40	40	40
Total	270	352	371	410	440

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number of graduates in these programs by institution, starting with actual counts for the 1999-2000 year, estimated counts for this year and the next, and reasonable projections for the two years beyond 2001-02. These estimates and projections are based on a polling of program directors at each of the UNC institutions, and on

an extrapolation of data from the private institutions. Figure 1 presents the actual and estimated number of graduates in these programs for the State as a whole and includes program enrollments through the current year. The rapid growth in enrollments over the past four years suggests that the estimates and projections shown in Table 5 are reasonable. The data in this graph also suggest that the proportion of graduates who are principal fellows will decrease in future years.

Figure 1. Master's Level Enrollments and Degrees Conferred in School Administration: All NC Colleges & Universities



Note: Includes enrollment and degrees conferred in School Administration by Gardner-Webb and Campbell University. Figures for degrees conferred in 2000-01 and 2001-02 are estimated.

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The data in Table 5 suggest that, with the exceptions of UNCW and perhaps FSU and WCU, there is limited ability to expand production of graduates in future years unless it is accomplished through off-campus or extended learning programs. In fact, programs with more than 35 graduates per year have generally expanded by adding cohorts of off-campus students, by collaborating with another institution, or by using distance learning technology. One advantage of such programs is that they deliver instruction where it is needed, a statutory goal of the original MSA legislation. It is assumed that expanded production of graduates beyond 2003-04 will rely heavily on extended learning options and will produce increases of at least 15 graduates per year. This assumption is used to complete the projection of graduates for years beyond 2003-04.

One aspect of the supply of principals and assistant principals is the racial and gender diversity of those being trained in MSA programs. When the programs were restructured in 1994-95 minority representation was lower than it had been in the older programs but has since improved notably as data on UNC enrollments in Table 6 (on p. 8) reveal. Over the past

five years the representation of African-American students had increased from 10.4 to 27.1 percent and the proportion of American Indian/Alaskan Native students has increased from 0.5 to 1.1 percent. Men continue to constitute about 35 percent of the students in training.

Table 6. UNC Enrollment in MSA Programs, by Race/Ethnicity and Gender Percent

Year	Men	White	African-American	American Indian/ Alaska Native	Other
1995-96	36.8	87.6	10.4	0.5	1.9
1996-97	30.2	82.1	13.8	1.5	2.6
1997-98	37.2	79.4	18.0	1.3	1.3
1998-99	40.0	78.1	20.2	0.6	1.1
1999-00	39.9	72.8	25.2	0.7	1.3
2000-01	34.2	70.2	27.1	1.1	1.6

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Projected New Hires Compared to Projected Numbers of Graduates

Table 7 compares the low and high projections of new hires with the projections of MSA grads through the year 2009-10. It is clear from these projections that new production will

Table 7. Projected New Hires Compared with Projected MSA Graduates, 2000-01 through 2009-10

Year	Projected New Hires		Projected MSA Graduates
	Based on 5-yr Average Turnover Rate = 9.67	Based on 1999-2000 Turnover Rate = 11.51	
2000-01	525	607	352
2001-02	542	624	371
2002-03	526	610	410
2003-04	543	628	440
2004-05	554	640	455
2005-06	554	641	470
2006-07	553	642	485
2007-08	553	643	500
2008-09	556	646	515
2009-10	564	656	530

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not be enough to satisfy future demand, whether it is based on the low or high projection, just as it is not enough to satisfy current demand. However, the gap between annual demand and production will narrow over time and permit more new hires to be drawn from recent MSA graduates. Of course, not all new graduates will be available to seek employment in North Carolina, because some graduates will fail to pass the required licensure exam (currently about 5%), some will choose not to become a principal or assistant principal, and some will choose to enter the occupation in a state other than North Carolina. These leakages from the production pipeline suggest that a substantial number of new hires will need to come from the reserve pool of already trained graduates or of recently trained graduates from other states. In fact, data on the origin of newly hired principals and assistant principals show that in 1999-2000, 62 percent came from the reserve pool and 38 percent from new graduates of North

Carolina’s MSA programs. Data from the same source show that just four years earlier, the proportion of new hires drawn from the reserve pool was 76 percent while the proportion drawn from the class of recent MSA graduates was only 24 percent. These comparisons suggest that greater reliance is being placed on the supply of recent graduates and lesser reliance on the reserve pool. This raises the question of whether the reserve pool is being depleted, or alternatively, whether employers are registering a clear preference for hiring new MSA graduates, or whether a combination of these events may explain this change in the origin of new hires.

Data on the reserve pool are drawn from the licensure files of the North Carolina Department of Public Instruction. They show that the number of persons with active principal/assistant principal licenses who were not employed in a North Carolina public school increased from 4,294 in the fall of 1993 to 5,655 in the fall of 1996, but fell to a level of 2,713 today (see Table 8). This is a significant reduction in number and may be a clear signal

Table 8. Reserve Pool Calculation (May 2001)

Total with active (unexpired) license	10,227
Employed in central office	1,259
Employed as a principal or assistant principal	4,540
Assistant principal interns	91
Other	1,624
Reserve pool (available to work in a private, charter, or special-purpose school)	2,713

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that the tighter market for principals and assistant principals is gradually depleting the reserve pool. Lending strength to this argument is the observation that the relatively sharp rise in North Carolina’s teacher salaries relative to those of

assistant principals—the entry level position for principal—may have caused some members of the reserve pool to let their licenses become inactive. Some would argue that competition from growing numbers of newly trained MSA graduates may also have exacerbated this effect. Whatever the cause or causes of the declining number of persons in the reserve pool, the end result will be a heightened dependence on current MSA production to meet hiring needs.

Shortage, Surplus or Balance?

This raises the question of whether there is a current shortage, and if not, whether one will soon occur. At this point, the answer to both questions is probably “no” but annual monitoring of the factors considered in this report will be necessary to assure that the answer remains “no.” Even if there is no shortage statewide, there may still be some shortages in particular schools or school districts. The fact that these are not severe is suggested by an analysis of vacant administrative positions as of October 15, 2000 in the public schools. The analysis showed that only 18 of 117 school districts had any vacancies in principal or assistant principal positions, and statewide, vacancies represented less than one percent of the total number of positions. Some of these vacant positions may be permanently lost due to revenue shortfalls in the next year or two, a situation that will reduce the demand for MSA graduates.

The increase in MSA enrollments at UNC institutions has been very strong in recent years, as demonstrated by Figure 1 (p. 7), and the projections of additional graduates in the next few years show significant increases. With enrollments and degree production having more than doubled in the past four years and with growing emphasis within existing programs on distance learning, it seems likely that no shortages will develop statewide in the next four years. Even though the reserve pool has been somewhat depleted over the past eight years, it appears to have stabilized at about 2,500 persons, a number that can prevent potential shortages. Future reports on this topic will be needed to verify these conclusions.