

**Production and Retention of Beginning Teachers from 1999 to 2003:
A Comparison of Preparation Routes**

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Executive Summary

Since the 1980s, individuals seeking certification as teachers in Texas have had a number of options for preparation at their disposal. In addition to traditional undergraduate degree programs in education, teachers can be prepared and certified through alternative certification programs offered through education service centers, school districts, community colleges, and private entities, as well as through universities. They can also train in university post-baccalaureate programs. This preliminary report is an initial examination of emerging trends in production and retention of beginning teachers between these three primary routes to teacher certification in Texas.

Production of Beginning Teachers

In 1999, 25,377 initial certificates were issued to 15,411 beginning teachers in Texas. By 2003, that number had risen to 28,349 certificates issued to 20,698 teachers. During this period, the ratio of females to males remained stable, with females making up around 78% of beginning teachers each year. The distribution of ethnic groups also remained relatively stable, although the percent of Hispanic teachers rose from 22% to 26%, and the percent of white teachers decreased slightly from 69% to 62%. Beginning teachers in Texas continue to be predominately female and white.

The distribution of certificates by subject areas also remained fairly constant. In each year, about 6% of initial certificates issued were in mathematics, about 3% were in science, about 8% were in special education, about 7% were in bilingual education, and about 2% were in foreign languages. Only ¼ of initial certificates issued over the past five years have been in subject areas in which there has been the greatest need for teachers.

While the characteristics of teachers seems not to have changed much (at least in demographic terms), the nature of their preparation has changed tremendously. In 1999, 66% of beginning teachers were prepared in traditional, university undergraduate programs. By 2003, 45.5% of beginning teachers were prepared in undergraduate programs. At the same time, the percent of initially certified teachers from alternative certification programs grew from 17% in 1999 to 34% in 2003. Nineteen percent of beginning teachers in 2003 were prepared in post-baccalaureate programs. Combined, these two nontraditional routes produced the majority of beginning teachers in the state in 2003. In addition, alternative certification programs are producing the majority of male teachers, minority teachers, and teachers certified in most shortage subject areas.

Retention of Beginning Teachers

Retention of beginning teachers prepared in each route was analyzed for three cohorts of teachers initially certified in 1998, 1999, and 2000. Because retention is a complex issue, with a number of outcomes of interest, these cohorts were analyzed in several ways. First, the percentage of each cohort (by route) teaching in each year after certification was calculated to examine the rates at which teachers from each cohort were employed as teachers. Next, annual attrition rates were calculated to determine the rates at which teachers quit teaching. Finally, the

percentages of teachers teaching in every year after certification, only one year after certification, and never teaching were determined.

The highest initial (first year after certification) employment rates were found for teachers prepared in alternative certification programs. Over 90% of these teachers were teaching in their first year, about 10% more than undergraduate or post-baccalaureate programs. However, in the second year, their employment rates were nearly equal to other routes, despite decreases in employment for all routes. In the third year after certification, employment rates for alternatively certified teachers were equal to or lower than those for undergraduate programs. Post-baccalaureate programs had the lowest employment rates in every year for each cohort.

The lowest annual attrition rates were found after the first year of teaching. These rates tended to increase in subsequent years, particularly for teachers from undergraduate programs. First year attrition for teachers from undergraduate programs was 5%, but increased to 8-9% by 2003. Attrition rates for post-baccalaureate and alternative certification programs were higher initially, but remained fairly stable at 7-10% each year. By the third year after certification, quit rates were similar among all preparation routes. Although a smaller percentage of undergraduate teachers left, they made up more than half of all teachers who left teaching after their first year.

About 90% of newly certified teachers taught at some point between their year of certification and 2003. Of those who taught, 7-8% from each cohort did so for only one year. The fewest “one year only” teachers were prepared in undergraduate programs, and the most were prepared in post-baccalaureate programs. The majority of teachers who began teaching went on to teach in every year between their year of certification and 2003. Sixty-three percent of teachers certified in 1998 had taught for five consecutive years by 2003. As with teachers who taught for only one year, rates were similar between programs.

The greatest differences between programs were found in rates of teachers who were certified, but did not teach. While 6% of alternatively certified teachers did not teach, 10-11% of teachers from undergraduate programs and 14-15% of teachers from post-baccalaureate programs did not enter the classroom in the first few years after being certified. These proportions represent significant numbers of teachers, 4,249 of teachers initially certified between 1998 and 2000. The high proportion of teachers from post-baccalaureate programs who never taught is of particular concern given the high proportion of teachers from those programs who also taught for only one year after being fully certified. Over 20% of teachers from these programs either never entered the classroom, or left after one year.

Conclusions

While the characteristics of teachers seem not to have changed much (at least in demographic terms), the nature of their preparation has changed tremendously. Fewer new teachers are prepared in traditional undergraduate programs, and more are being prepared in alternative certification and post-baccalaureate programs. The growth of alternative certification has been particularly strong. This route appears to be on track to become the primary source of new teachers in Texas within the next ten years.

There are some important differences between preparation routes in retention of beginning teachers. About 10% of newly certified teachers do not teach at all. An even greater number of post-baccalaureate teachers (14-15%) do not teach after receiving standard certification. These rates are compounded by low initial employment rates and fairly high annual attrition rates among post-baccalaureate teachers. Far fewer alternatively certified teachers (6%) forego teaching, and only about 10% do not teach in the first year after certification, but they tend to leave teaching in greater numbers from year to year. Teachers prepared in undergraduate programs tend to teach longer and leave the profession at lower rates annually than teachers from other programs, but fewer of them become employed in the first place, with only about 80% teaching in the first year and 10% not teaching at all.

The combination of high rates of not teaching, low employment rates in the first year, and high attrition rates among those who do begin teaching yields the overall “loss” of initially certified teachers from Texas classrooms. The loss from each preparation route differs due to differences in these rates. The loss of the 1998 post-baccalaureate cohort was 34% by 2003 because of their high rates of teachers who did not teach and low initial employment rates. Twenty-nine percent of the 1998 undergraduate cohort was lost within five years for the same reasons. Although alternatively certified teachers had both low rates of not teaching and high initial employment rates, their high annual attrition rates caused 34% of them to be lost within five years.

The information provided here indicates that nontraditional routes to certification are becoming important influences on teacher preparation in the state, and that teachers from these programs differ from those trained in more traditional programs in many important ways. However, this report offers only an initial analysis of emerging trends in teacher production and retention in Texas. More thorough analysis will shed more light on what can be expected from preparation programs in the coming years, as well as how our system of educator preparation and support can be improved to meet new demands and respond to new challenges.

Introduction

Since the 1980s, individuals seeking certification as teachers in Texas have had a number of options for preparation at their disposal. In addition to traditional undergraduate degree programs in education, teachers can be prepared and certified through alternative certification programs offered through education service centers, school districts, community colleges, and private entities, as well as through universities. They can also train in university post-baccalaureate programs. These programs were created to provide alternative routes to certification for individuals for whom traditional programs may be too costly, time-consuming, or cumbersome. Since their creation, nontraditional routes to certification have been the subject of intense debate and research by educators and policymakers.

This preliminary report is an initial examination of emerging trends between the three primary models of teacher preparation in Texas: undergraduate, post-baccalaureate, and alternative certification programs. This analysis compares these programs in two areas:

- Production of new teachers
- Retention of new teachers in the classroom

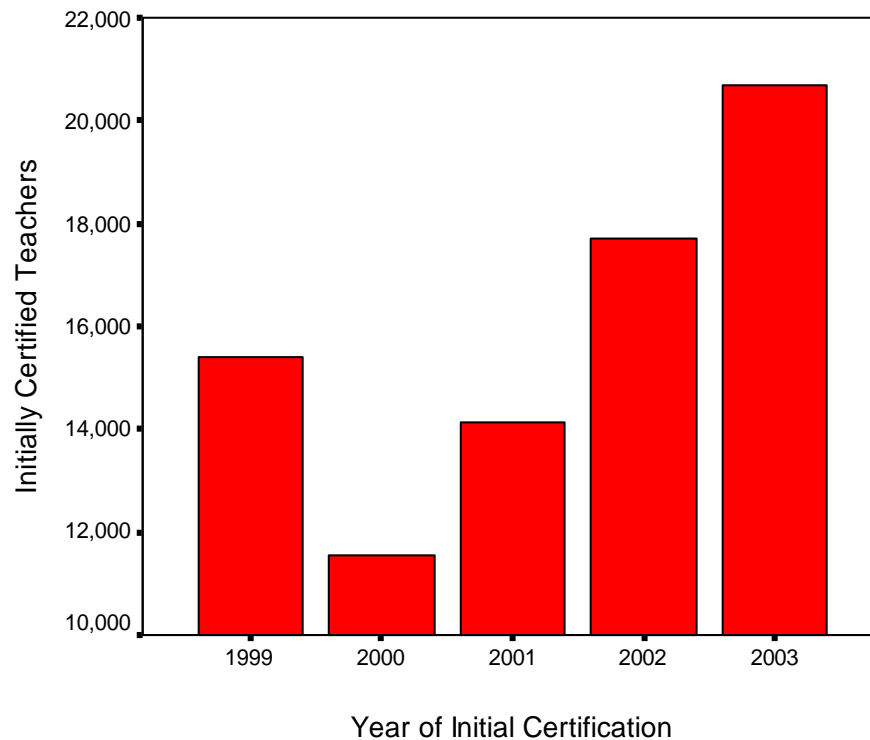
This report attempts to compare preparation routes for the purpose of distinguishing differences between them in preparing teachers for Texas schools. However, one must keep in mind in interpreting these results that the distinction between post-baccalaureate and alternative certification programs is often unclear. They are both intended to prepare individuals who already hold baccalaureate degrees, and often share many design features. In practice, they may provide essentially the same experiences to teacher candidates. While these two programs are differentiated in this report, it is possible that they may best be considered as a single preparation route.

Teachers are the primary focus of this report. In addition, only teachers initially certified through the three primary routes are discussed. Teachers obtaining additional certificates and out-of-state teachers are not included in the analysis. The information provided here is entirely descriptive in nature, and no analysis of causal relationships has yet been conducted. These are complex issues that will need more thorough examination to fully understand, and this analysis is merely a first step in that process. However, the findings do suggest some important issues that can inform future research.

Production of Beginning Teachers

In 1999, 25,377 initial certificates were issued to 15,411 beginning teachers in Texas. By 2003, that number had risen to 28,349 certificates issued to 20,698 teachers. Chart 1 shows that the number of beginning teachers fell to 11,529 in 2000, but there has been a consistent increase since then. The drop in 2000 may have been due in part to changes in certification laws requiring renewals after 1999. A number of teachers may have rushed to become certified in 1999 to take advantage of the previous lifetime certificate that was replaced by the renewable certificate in 2000. Economic factors may also have played a role in the decline that year.

Chart 1
Initially Certified Teachers 1999 – 2003



During this period, the ratio of females to males remained stable, with females making up around 78% of beginning teachers each year. The distribution of ethnic groups also remained relatively stable, although the percent of Hispanic teachers rose from 22% to 26%, and the percent of white teachers decreased slightly from 69% to 62%. Although total numbers of minority and male teachers have increased over the past five years, as seen in Tables 2 and 3, beginning teachers in Texas continue to be predominately female and white. Charts 2 and 3 show changes in the percentages of beginning teachers by gender and by ethnicity.

Chart 2
Distribution of Initially Certified Teachers by Gender 1999 - 2003

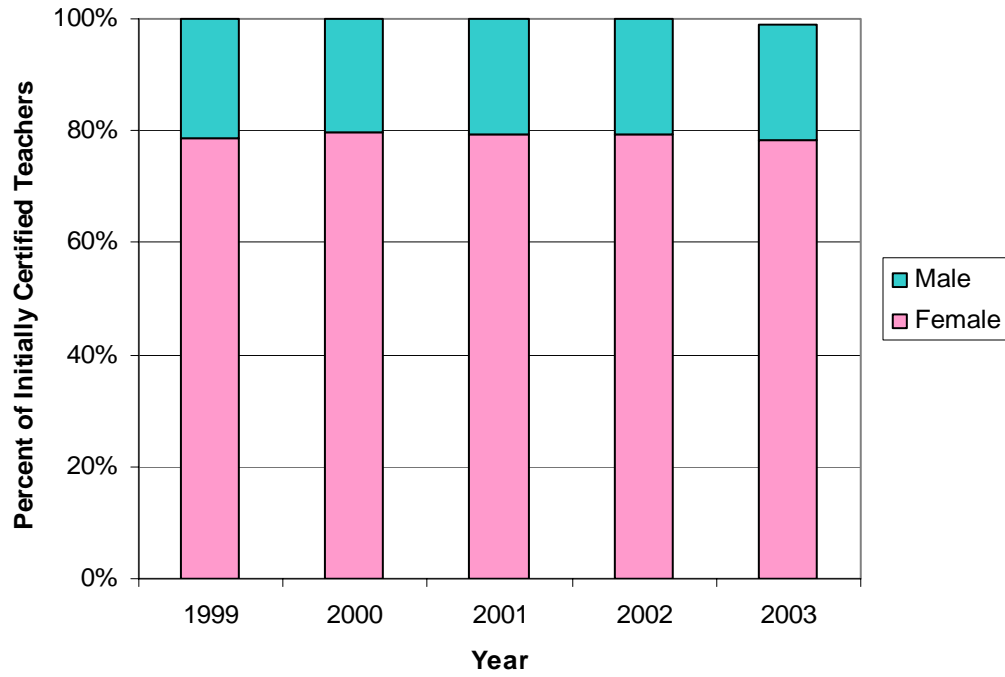
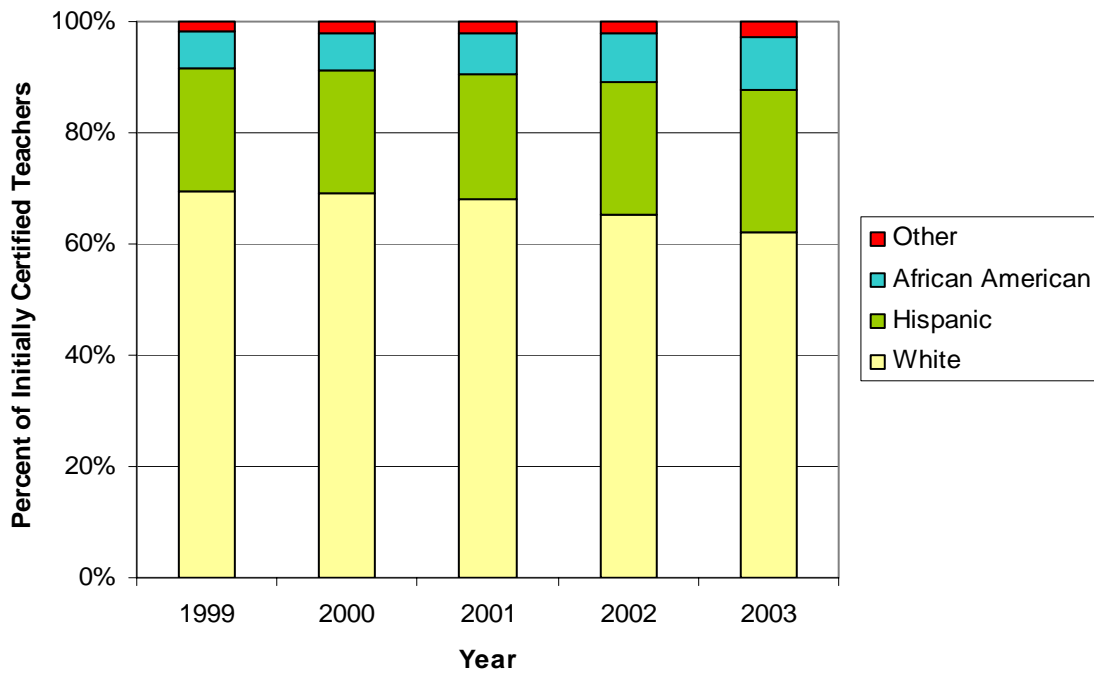
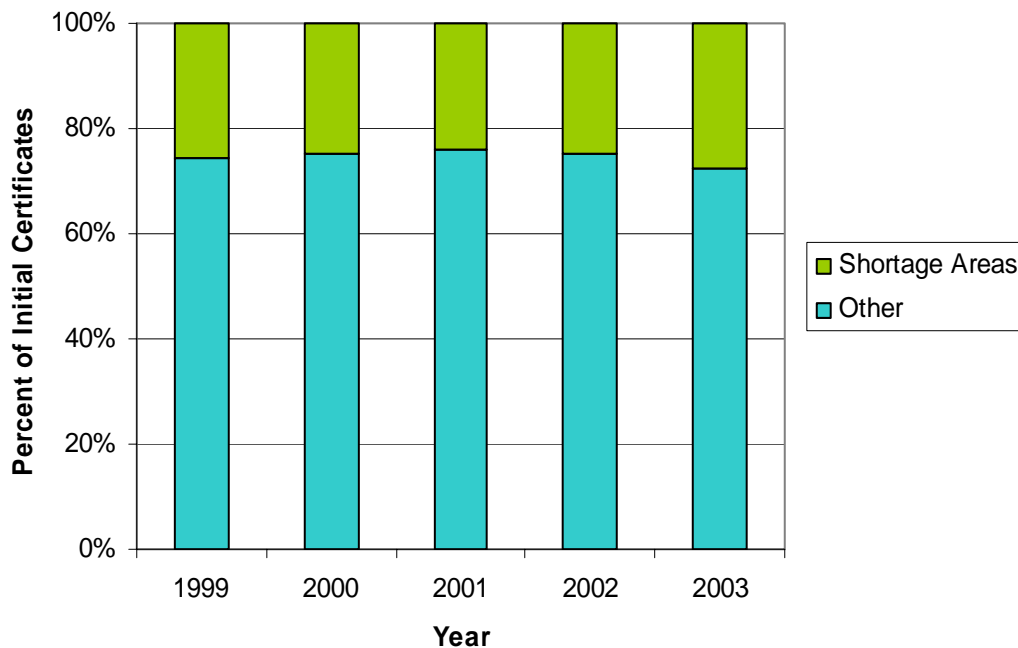


Chart 3
Distribution of Initially Certified Teachers by Ethnicity 1999 - 2003



The distribution of certificates by subject areas also remained constant. Chart 4 shows changes in the percentages of initial certificates by subject area. In each year, about 6% of initial certificates issued were in mathematics, about 3% were in science, about 8% were in special education, about 7% were in bilingual education, and about 2% were in foreign languages. Only ¼ of initial certificates issued over the past five years have been in subject areas in which there has been the greatest need for teachers. The vast majority (about 75%) of initial certificates have been issued for other fields, particularly elementary education, and English language arts and reading areas. While overall numbers of certificates have risen, the percentages issued in areas with more critical needs have not changed substantially.

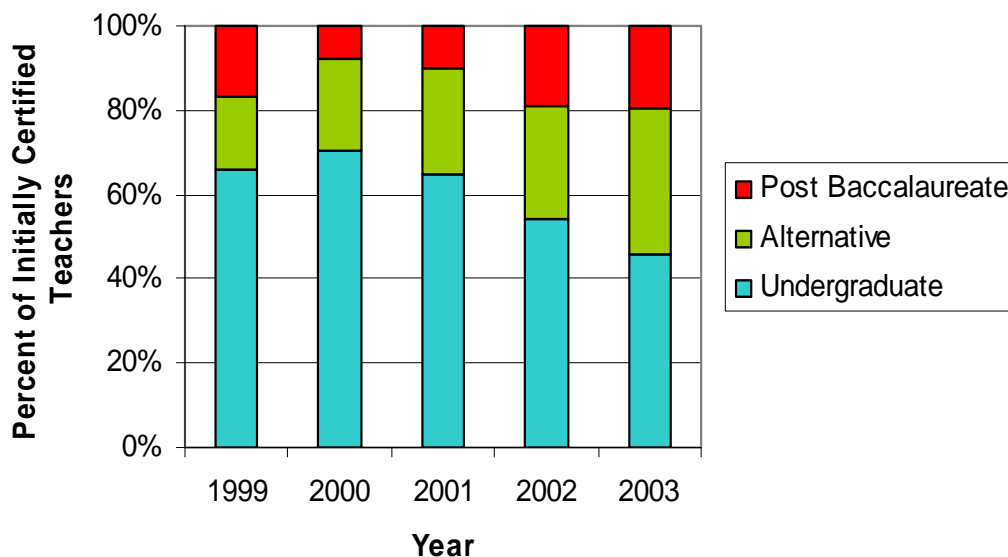
Chart 4
Distribution of Initial Certificates by Subject Area



Production by Program

In 1999, 66% of beginning teachers were prepared in traditional, university undergraduate programs.¹ That percentage rose slightly in 2000, to 70%, but subsequently declined each year afterward. By 2003, 45.5% of beginning teachers came from undergraduate programs. At the same time, the percentage of beginning teachers from alternative certification programs grew from 17% in 1999 to 34% in 2003. The percentage of teachers prepared in post-baccalaureate programs declined in 2000, but then increased each year, representing 19% of beginning teachers in 2003. These figures are shown in Tables 1 and 2, and Chart 5. Nontraditional routes have clearly become popular, and in 2003, post-baccalaureate and alternative routes combined to overtake undergraduate programs as the primary sources of beginning teachers in the state.

Chart 5
Distribution of Beginning Teachers by Program Type 1999 – 2003



Post-baccalaureate and alternative certification programs have become significant sources for new male and minority teachers. Table 3 shows that more than half of male teachers were prepared in undergraduate programs in 1999. By 2003, 33% of males were prepared in them. Alternative certification programs are now the primary source of male beginning teachers, preparing 41% of them in 2003. In 1999, almost $\frac{3}{4}$ of female beginning teachers were prepared in undergraduate programs. In 2003, 50% of females were prepared in nontraditional programs. Alternative programs produced most of those teachers, representing 33% of all female beginning teachers produced that year.

¹ These figures do not include initial certificates issued to beginning teachers from other routes to certification. However, undergraduate, post-baccalaureate, and alternative programs represent the vast majority of initial certificates issued.

Alternative programs also now prepare 49% of African American teachers. Table 4 shows that about 2/3 of Hispanic and white teachers prepared in undergraduate programs in 1999. By 2003, about half of beginning teachers in those two ethnic groups were produced by post-baccalaureate and alternative certification programs. Within each route, the distribution of ethnic groups did not change substantially from 1999 to 2003. These figures are shown in Table 5. The majority of beginning teachers from each route are white, although alternative certification programs have a somewhat lower percentage than post-baccalaureate and undergraduate programs. Undergraduate programs prepare the lowest percentage of African American teachers, and post-baccalaureate programs prepare the lowest percentage of Hispanic teachers.

Table 1
Beginning Teachers by Preparation Route 1999 – 2003

	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>
Undergraduate	10,131	66%	8,124	70%	9,113	65%	9,548	54%	9,417	46%
Post-baccalaureate	2,567	17%	902	8%	1,454	10%	3,318	19%	3,998	19%
Alternative	2,661	17%	2,503	22%	3,528	25%	4,684	27%	7,113	35%
TOTAL	15,359	100%	11,529	100%	14,095	100%	17,550	100%	20,528	100%

Figures are based on the number of individuals receiving initial standard teaching certificates each year.

Table 2
Initial Certificates Issued by Preparation Route 1999 – 2003

	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>
Undergraduate	18,556	73%	14,666	78%	16,276	73%	17,389	63%	15,177	54%
Post-baccalaureate	3,663	14%	1,261	7%		9%	4,597	17%	5,236	18%
Alternative	3,158	13%	2,936	15%	4,086	18%	5,419	20%	7,936	28%
TOTAL	25,377	100%	18,863	100%	22,355	100%	27,405	100%	28,349	100%

Figures are based on the number of initial standard certificates issued each year. Individual teachers may hold more than one certificate.

Table 3
Initially Certified Teachers by Gender 1999 – 2003

	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>
<u>Female</u>										
Undergraduate	8,371	69%	6,737	73%	7,535	67%	8,046	58%	7,909	49%
Post-baccalaureate	1,798	15%	636	7%	1,017	9%	2,383	17%	2,858	18%
Alternative	1,910	16%	1,805	20%	2,642	24%	3,505	25%	5,286	33%
Total	12,079	100%	9,178	100%	11,194	100%	13,934	100%	16,053	100%
<u>Male</u>										
Undergraduate	1,759	54%	1,386	59%	1,577	54%	1,488	41%	1,502	34%
Post-baccalaureate	768	23%	266	11%	437	15%	931	26%	1,140	25%
Alternative	751	23%	698	30%	885	31%	1,178	33%	1,827	41%
Total	3,278	100%	2,350	100%	2,899	100%	3,597	100%	4,469	100%

Percentages are based on beginning teachers from each gender group in each year.

Table 4
Distribution of Ethnic Groups by Preparation Route 1999 - 2003

	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>
<u>African American</u>										
Undergraduate	447	44%	376	48%	469	46%	464	31%	501	26%
Post-baccalaureate	238	23%	108	14%	182	18%	444	30%	483	25%
Alternative	339	33%	304	38%	374	36%	594	39%	967	49%
Total	1,024	100%	788	100%	1,025	100%	1,502	100%	1,951	100%
<u>Hispanic</u>										
Undergraduate	2,352	69%	1,800	71%	2,055	65%	2,372	57%	2,682	51%
Post-baccalaureate	382	11%	129	5%	215	7%	603	14%	714	14%
Alternative	682	20%	618	24%	875	28%	1,234	29%	1,856	35%
Total	3,416	100%	2,547	100%	3,145	100%	4,209	100%	5,252	100%
<u>White</u>										
Undergraduate	7,190	67%	5,822	73%	6,426	67%	6,533	57%	6,007	47%
Post-baccalaureate	1,884	18%	628	8%	1,009	10%	2,182	19%	2,685	21%
Alternative	1,589	15%	1,517	19%	2,184	23%	2,730	24%	4,038	32%
Total	10,663	100%	7,967	100%	9,619	100%	11,445	100%	12,730	100%
<u>Other</u>										
Undergraduate	142	55%	126	56%	163	53%	179	45%	227	38%
Post-baccalaureate	63	25%	37	16%	48	16%	89	23%	116	20%
Alternative	51	20%	64	28%	95	31%	126	32%	252	42%
Total	256	100%	227	100%	306	100%	394	100%	595	100%

Percentages are based on beginning teachers from each ethnic group in each year.

Table 5
Distribution of Ethnic Groups within Preparation Routes 1999 – 2003

	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>	<i>Count</i>	<i>Percent</i>
<u>Undergraduate</u>										
African American	447	4%	376	5%	469	5%	464	5%	501	5%
Hispanic	2,352	23%	1,800	22%	2,055	23%	2,372	25%	2,682	28%
White	7,190	71%	5,822	72%	6,426	71%	6,533	68%	6,007	64%
Other	139	1%	117	1%	146	2%	169	2%	226	2%
Total	10,128	100%	8,115	100%	9,096	100%	9,538	100%	9,416	100%
<u>Post-baccalaureate</u>										
African American	238	9%	108	12%	182	13%	444	13%	483	12%
Hispanic	382	15%	129	14%	215	15%	603	18%	714	18%
White	1,884	73%	628	70%	1,009	70%	2,182	66%	2,685	67%
Other	60	2%	36	4%	45	3%	89	3%	116	3%
Total	2,564	100%	901	100%	1,451	100%	3,318	100%	3,998	100%
<u>Alternative</u>										
African American	339	13%	304	12%	374	11%	594	13%	967	14%
Hispanic	682	26%	618	25%	875	25%	1,234	26%	1,856	26%
White	1,589	60%	1,517	61%	2,184	62%	2,730	58%	4,038	57%
Other	50	2%	63	3%	92	3%	126	3%	251	4%
Total	2,660	100%	2,502	100%	3,525	100%	4,684	100%	7,112	100%

Percentages are based on beginning teachers from each preparation route in each year.

Preparation routes differ not only in who they are preparing, but also in what they are preparing teachers to teach. Again, changes in the subject areas identified as having a high need for teachers are of the most interest for this analysis. Table 6 shows that the percentage of certificates issued to teachers prepared in undergraduate programs in each of these areas (mathematics, special education, science, bilingual education, and foreign languages) decreased from 1999 to 2003. In mathematics, undergraduate programs now produce a little more than half of certificates issued. In bilingual education and science, they now produce about one third of certificates. Only in foreign languages are undergraduate programs still the primary source of certificates. Alternative certification programs, on the other hand, have grown substantially in these fields. They now produce one quarter of all mathematics certificates, over half of bilingual education certificates, one third of science certificates, and two thirds of special education certificates. Production from post-baccalaureate programs has remained fairly stable.

Across preparation routes, demographic patterns, as well as patterns of subject preparation have not changed substantially over the past five years. Ratios of demographic groups have remained nearly constant, and the percentages of beginning teachers prepared for different subject fields have not changed substantially. What has changed, however, is how beginning teachers are prepared. The traditional route to certification, undergraduate degree programs, has been eclipsed by nontraditional post-baccalaureate and alternative certification routes. These routes, which were once thought of as “alternatives,” are becoming common pathways to teaching in Texas. They now prepare not only the overall majority of beginning teachers, but also the majority of teachers in critical areas: minority teachers, male teachers, and teachers in a number of subjects in which there are shortages. These demographic shifts place added importance on the quality of these programs, since they are the primary source of some of our most needed teachers.

Table 6
Initial Certificates Issued in Shortage Areas 1999 – 2003

Subject Area	Year of Initial Certification									
	1999		2000		2001		2002		2003	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
<u>Bilingual Education</u>										
Undergraduate	665	51%	489	49%	552	45%	720	41%	783	35%
Post-baccalaureate	109	8%	22	2%	45	4%	150	9%	169	7%
Alternative	541	41%	496	49%	637	51%	866	50%	1,315	58%
Total	1,315	100%	1,007	100%	1,234	100%	1,736	100%	2,267	100%
<u>Foreign Languages</u>										
Undergraduate	328	68%	260	78%	298	74%	276	61%	245	52%
Post-baccalaureate	110	23%	47	14%	64	16%	110	24%	139	29%
Alternative	44	9%	27	8%	38	10%	68	15%	89	19%
Total	482	100%	334	100%	400	100%	454	100%	473	100%
<u>Mathematics</u>										
Undergraduate	1,225	76%	1,109	83%	1,093	76%	1,214	70%	938	55%
Post-baccalaureate	255	16%	87	6%	152	11%	313	18%	350	21%
Alternative	130	8%	148	11%	183	13%	198	12%	415	24%
Total	1,610	100%	1,344	100%	1,428	100%	1,725	100%	1,703	100%
<u>Science</u>										
Undergraduate	673	55%	515	62%	565	53%	540	41%	449	33%
Post-baccalaureate	348	28%	109	13%	203	19%	430	32%	469	35%
Alternative	215	17%	208	25%	298	28%	364	27%	435	32%
Total	1,236	100%	832	100%	1,066	100%	1,334	100%	1,353	100%
<u>Special Education</u>										
Undergraduate	698	37%	540	35%	553	30%	619	29%	610	24%
Post-baccalaureate	140	7%	53	4%	86	5%	194	9%	226	9%
Alternative	1,049	56%	944	61%	1,175	65%	1,321	62%	1,658	67%
Total	1,887	100%	1,537	100%	1,814	100%	2,134	100%	2,494	100%

Figures are based on initial certificates issued each year. Individual teachers may hold more than one certificate.

Retention of Beginning Teachers

Production of preparation programs is an important factor in considering the overall effectiveness of different routes to certification, but reveals little about the impact these pathways ultimately have on the teaching force and on schools. Measuring the influence of preparation programs on schools is difficult since they have little control over working conditions, student populations, district budgets and initiatives, etc. However, many educators and policymakers have questioned whether teachers prepared through different routes differ in how long they remain in the classroom. This analysis is an initial step toward addressing that question.

In examining retention, three cohorts (1998 to 2000) of initially certified teachers were tracked over a period of five years (1999 to 2003). Because retention is a complex issue, with a number of outcomes of interest, these cohorts were analyzed in several ways. First, the percent of each cohort (by route) teaching in each year after certification was calculated to examine the rates at which teachers from each cohort were employed as teachers. Next, annual attrition rates were calculated to determine the rates at which teachers left the profession. Finally, the percentages of teachers teaching in every year after certification, only one year after certification, and never teaching were determined. These rates provide measures of the utility provided to public school classrooms by these cohorts.

The first year of employment is considered here to be the year following certification. The vast majority (over 90%) of teachers from alternative certification programs are employed as teachers of record in the year in which they are certified. However, far fewer teachers from undergraduate (about 20%) and post-baccalaureate programs (less than half) teach in their year of certification. This difference is most likely due to the internship as a teacher of record required by alternative certification programs. Since it was difficult to distinguish teachers who began teaching outside the auspices of a preparation programs in their year of certification from those who were still completing field experience requirements, employment patterns were analyzed starting from the year after certification. Attrition from programs and from field experiences is an important, but separate, issue that will be examined in future reports.

In each analysis, only teachers who received initial standard teaching certificates between 1998 and 2000, and were employed as teachers between 1999 and 2003 were included. Individuals receiving professional or probationary certificates were not included. Individuals employed as educational aides, substitute teachers, or special duty teachers were also not included. Finally, only teachers with 1 or fewer years of experience were included to more accurately identify beginning teachers, as opposed to individuals who may have taught for a number of years before becoming fully certified (this is also an important issue that should be analyzed separately).

Since the data were taken from the Texas Public Education Information Management System (PEIMS), only teachers who taught in Texas classrooms are considered here. A number of teachers receive certification in Texas, and then move to other states to practice (actual numbers are unknown). These teachers do enter the profession, but their utility to Texas public schools is limited to their clinical experiences in classrooms while in the state. While these parameters excluded many individuals, the primary concern for this analysis was how long

individuals trained to teach in Texas actually teach in Texas schools. The rates at which individuals certified as teachers become employed in other roles, and the number of certified teachers leaving the state to begin teaching are important issues that were beyond the scope of this preliminary report.

Employment Rates

The percentages of each cohort employed as teachers in the years following certification are shown in Table 12. These rates decreased each year for all three cohorts, indicating overall losses of teachers despite individual movement in and out of the profession from year to year. In 1999, 82% of teachers initially certified in 1998 were employed as teachers. In 2003, only 67% of that cohort was teaching. The same pattern was observed for the 1999 and 2000 cohorts.

The highest initial (first year after certification) employment rates were found for teachers from alternative certification programs. Over 90% of these teachers were teaching in their first year, about 10% more than undergraduate or post-baccalaureate programs. However, in the second year, their employment rates were nearly equal to other routes, despite decreases in employment for all routes. In the third year after certification, employment rates for alternatively certified teachers were equal to or lower than those for teachers prepared in undergraduate programs. Post-baccalaureate programs had the lowest employment rates in every year for each cohort.

Table 12
Employment Rates for Beginning Teachers 1998 - 2000

Preparation Route	Initially Certified	Taught 1st Year	Taught 2nd Year	Taught 3rd Year	Taught 4th Year	Taught 5th Year
<u>1998 Cohort</u>						
		<i>(1999)</i>	<i>(2000)</i>	<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>
Undergraduate	9,081	81% (7,322)	80% (7,288)	76% (6,935)	72% (6,574)	68% (6,200)
Post-baccalaureate	2,582	78% (2,012)	75% (9,593)	69% (9,593)	65% (9,593)	63% (1,615)
Alternative	2,663	91% (2,413)	83% (2,219)	76% (2,031)	71% (1,899)	67% (1,778)
Total	14,326	82% (11,747)	80% (11,446)	75% (10,736)	71% (10,147)	67% (9,603)
<u>1999 Cohort</u>						
		<i>(2000)</i>	<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>	
Undergraduate	10,131	80% (8,135)	80% (8,085)	77% (7,791)	73% (7,396)	-
Post-baccalaureate	2,567	79% (2,018)	75% (1,925)	69% (1,784)	66% (1,702)	-
Alternative	2,661	91% (2,426)	82% (2,194)	76% (2,026)	71% (1,901)	-
Total	15,359	82% (12,579)	79% (12,204)	76% (11,601)	72% (10,999)	-
<u>2000 Cohort</u>						
		<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>		
Undergraduate	8,124	84% (6,824)	83% (6,727)	79% (6,418)	-	-
Post-baccalaureate	902	81% (732)	77% (695)	71% (643)	-	-
Alternative	2,503	92% (2,303)	84% (2,095)	78% (1,952)	-	-
Total	11,529	86% (9,859)	83% (9,517)	78% (9,013)	-	-

Employment rates are the percentages of each cohort initially certified who were employed as teachers in each year. Figures do not include members of cohorts who were employed in other roles, and do not reflect whether individuals were teaching in the previous year. For example, 81% of the 1998 undergraduate cohort of beginning teachers (7,322 teachers) taught in the first year after initial certification (1999). In the second year after certification (2000), 80% of the original cohort (7,288 teachers) was teaching. These teachers may or may not have taught in 1999. Actual numbers of teachers are in parentheses.

Annual Attrition

Annual attrition rates capture the percentage of teachers who leave the profession after having taught in the previous years. A common concern in examining attrition rates is that teachers do not always teach consecutively year after year. Individuals may take one or more years off for various reasons, and then return to the profession. In order to capture true losses of teachers from a cohort of initially certified teachers, these individuals should be removed from analysis. Table 13 shows annual attrition rates for each cohort based on the number of teachers who taught consecutively after certification, then were not employed in any other years during the time period observed. For the 1998 cohort, the time period is 1999 – 2003; for the 1999 cohort, 2000 – 2003; and for the 2000 cohort, 2001 – 2003. First year attrition includes teachers who taught in the first year, then did not teach in any other year; second year attrition includes teachers who taught for the first two years, then did not teach in any other year, and so on. Therefore, individuals who may have taught in the first year, and also in one or more other years during the time period are not included. Again, individuals who became employed in other roles in schools are not included to focus the analysis on classroom teaching.

The lowest attrition rates were found after the first year of teaching. These rates tended to increase in subsequent years, particularly for teachers from undergraduate programs. First year attrition for teachers from undergraduate programs was 5%, but increased to 8-9% by the end of the time period. Attrition rates for post-baccalaureate and alternative certification programs were higher initially, but remained fairly stable at 7-10% each year. By the third year after certification, attrition rates were similar among all preparation routes. It is important to note that the rates for undergraduate programs correspond to a much larger number of teachers than those for post-baccalaureate programs, making the impact of their attrition rates greater. For example, while the first-year attrition rate for the 1999 cohort from undergraduate programs is only 5%, that amounts to a loss of 415 teachers from those programs, versus 201 alternatively certified and 161 post-baccalaureate teachers, which both had 8% attrition rates after the first year of teaching. Although a smaller percentage of undergraduate teachers quit, they made up more than half of all teachers from the cohort of beginning teachers certified in 1999 who left teaching after their first year.

Table 13
Annual Attrition Rates for Beginning Teachers 1998 - 2000

Preparation Route	Initially Certified	Taught 1st Year	Quit After 1 st Year	Quit After 2nd Year	Quit After 3rd Year	Quit After 4th Year	Total Attrition
<u>1998 Cohort</u>							
		<i>(1999)</i>	<i>(2000)</i>	<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>	<i>(1999-2003)</i>
Undergraduate	9,081	81% (7,322)	5% (347)	6% (406)	7% (459)	9% (493)	23% (1,705)
Post-baccalaureate	2,582	78% (2,012)	7% (132)	8% (147)	8% (133)	7% (105)	26% (517)
Alternative	2,663	91% (2,413)	7% (170)	9% (186)	8% (156)	9% (164)	28% (676)
Total	14,326	82% (11,747)	6% (649)	7% (739)	8% (748)	9% (762)	25% (2,898)
<u>1999 Cohort</u>							
		<i>(2000)</i>	<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>		<i>(2000-2003)</i>
Undergraduate	10,131	80% (8,136)	5% (415)	6% (446)	8% (575)	-	18% (1,436)
Post-baccalaureate	2,567	79% (2,017)	8% (161)	9% (160)	8% (136)	-	23% (457)
Alternative	2,661	91% (2,426)	8% (201)	9% (198)	9% (180)	-	24% (579)
Total	15,359	82% (12,579)	6% (777)	7% (804)	8% (891)	-	20% (2,472)
<u>2000 Cohort</u>							
		<i>(2001)</i>	<i>(2002)</i>	<i>(2003)</i>			<i>(2001-2003)</i>
Undergraduate	8,124	84% (6,827)	5% (375)	8% (476)	-	-	12% (851)
Post-baccalaureate	902	81% (733)	8% (59)	10% (68)	-	-	17% (127)
Alternative	2,503	92% (2,303)	9% (198)	10% (205)	-	-	17% (403)
Total	11,529	86% (9,863)	8% (632)	8% (749)	-	-	14% (1,381)

Quit rates are percentages of teachers teaching in one year who did not teach in any subsequent years. The percent who quit after the first year is the percent leaving teaching after the first year following certification; the percent who quit after the second year is the percent leaving teaching after having taught the first two years following certification, and so on. Total Attrition is the percent of teachers who began teaching in the first year, but had left teaching by the end of the time period observed. For example, 81% of teachers prepared in undergraduate programs in 1998 (7,322 teachers) taught in the first year after certification (1999). Five percent of those teachers (347) did not teach in the following year, or any other year through 2003. Of the 7,322 teachers prepared in undergraduate programs who began teaching in 1999, 1,705 or 23%, had quit teaching by the fifth year.

Years of Teaching

In addition to annual attrition and employment rates, retention was measured in terms of how long teachers from each cohort served in the classroom. These figures can be thought of as measures of the utility of newly certified teachers, at least in terms of their use as classroom teachers. Percentages were calculated for teachers who taught in any year(s) during the time period observed, teachers who taught for only one year, teachers who taught consecutively in each year after certification, and teachers who were certified but did not teach at all. These figures are shown in Table 14.

About 90% of teachers who were certified taught at some point between their year of certification and 2003. Of those who taught, 7-8% from each cohort taught for only one year. This year could have been any year during that time, not necessarily the first year after certification. The fewest “one year only” teachers came from undergraduate programs, and the most came from post-baccalaureate programs. However, the differences between preparation routes were relatively small, only 2-3 percentage points. The majority of teachers who began teaching went on to teach consecutively between certification and 2003. Sixty-three percent of teachers certified in 1998 had taught for five consecutive years by 2003. Rates for consecutive teaching were higher for other cohorts, but this is likely due to the shorter time periods for which their employment was calculated. As with teachers who taught for only one year, rates were similar between programs.

The greatest differences between routes were found in rates of teachers who were certified, but did not teach. While 6% of alternatively certified teachers did not teach, 10-11% of teachers from undergraduate programs and 14-15% of teachers from post-baccalaureate programs did not enter the classroom in the first few years after being certified. These proportions represent significant numbers of teachers: 4,249 of teachers initially certified between 1998 and 2000. While some of these teachers may have worked in public education in other capacities, and some may enter the profession later, many of these individuals will never be classroom teachers. The high proportion of teachers from post-baccalaureate programs who never taught is of particular concern given the high proportion of teachers from those programs who also taught for only one year after being fully certified. Over 20% of teachers from these programs either never entered the classroom, or left after one year.

Table 14
Years of Teaching for Beginning Teachers 1998 - 2000

Preparation Route	Initially Certified	Taught In Period*	Taught Only One Year**	Taught Every Year in Period**	Did Not Teach*
<u>1998 Cohort</u>					
		<i>(1999-2003)</i>		(5 years)	
Undergraduate	9,081	90% (8,147)	6% (484)	63% (5,160)	10% (934)
Post-baccalaureate	2,582	85% (2,199)	8% (170)	61% (1,335)	15% (383)
Alternative	2,663	94% (2,493)	7% (185)	63% (1,580)	6% (170)
Total	14,326	90% (12,839)	7% (839)	63% (8,075)	10% (1,487)
<u>1999 Cohort</u>					
		<i>(2000-2003)</i>		(4 years)	
Undergraduate	10,131	89% (8,966)	7% (588)	72% (6,416)	11% (1,162)
Post-baccalaureate	2,567	86% (2,202)	10% (212)	67% (1,470)	14% (365)
Alternative	2,661	94% (2,507)	9% (228)	69% (1,741)	6% (154)
Total	15,359	89% (13,675)	8% (1,028)	70% (9,627)	11% (1,681)
<u>2000 Cohort</u>					
		<i>(2001-2003)</i>		(3 years)	
Undergraduate	8,124	90% (7,311)	7% (526)	80% (5,871)	10% (811)
Post-baccalaureate	902	86% (776)	10% (76)	77% (595)	14% (126)
Alternative	2,503	94% (2,358)	9% (217)	78% (1,848)	6% (144)
Total	11,529	91% (10,445)	8% (819)	80% (8,314)	9% (1,081)

* Figures are based on number of initially certified teachers.

** Figures are based on number of teachers who taught in the time period observed.

Table shows percentages of teachers who were certified and taught for varying lengths of time. For example, 90% of the 1998 cohort of teachers from undergraduate programs taught at some point between 1999 and 2003. Of those who taught, 6% taught for only one year, while 63% taught for each year in the period (5 years). Ten percent of the 9,081 teachers prepared in undergraduate programs in 1998 did not teach at all between 1999 and 2003.

Conclusions

The number of new teachers being certified in Texas has been increasing since 2000. Over 20,000 new teachers were certified in 2003, and that number would increase if out-of-state teachers were included. In terms of sheer numbers, teacher production in the state is growing rapidly. Despite this growth, new teachers in Texas continue to be predominately female, white, and certified in subject areas in which there is relatively little need.

While the characteristics of teachers seems not to have changed much (at least in demographic terms), the nature of their preparation has changed tremendously. Fewer new teachers are prepared in traditional undergraduate programs, and more are being prepared in alternative certification and post-baccalaureate programs. The growth of alternative certification programs has been particularly strong. Not only are these programs on track to become the primary source of new teachers in Texas within the next ten years, but they have already become the primary source of minority teachers and male teachers. They also produce the majority of teachers in special education and bilingual education, as well as growing numbers of mathematics and science teachers.

While we currently have little information about the performance of teachers from various routes to certification, the retention analysis presented here offers some insight into the utility of those teachers in public schools. Teacher preparation requires considerable time and resources on the part of students, programs, schools, districts, and state education agencies. It stands to reason that public education stakeholders would be interested in retaining teachers in the classroom for as long as possible once they have been prepared. In addition to being a good return on investment, teachers who teach for longer periods also provide a wealth of knowledge and skills to the public education system through their experience.

The findings on retention in this report are mixed. While the vast majority of teachers do teach at some point after they become certified, about 10% of newly certified teachers do not teach at all. An even greater number of post-baccalaureate teachers (14-15%) do not teach after receiving standard certification. These rates are compounded by low initial employment rates and fairly high annual attrition rates among post-baccalaureate teachers. Far fewer alternatively certified teachers (6%) forego teaching, and only about 10% do not teach in the first year after certification, but they tend to leave teaching in greater numbers from year to year. Teachers from undergraduate programs tend to teach longer and leave the profession at lower rates annually than teachers from other programs, but fewer of them become employed in the first place, with only about 80% teaching in the first year and 10% not teaching at all.

The combination of high rates of not teaching, low employment rates in the first year, and high attrition rates among those who do begin teaching yields the overall “loss” of initially certified teachers from Texas classrooms. The loss from each preparation route differs due to differences in these rates. The loss of the 1998 post-baccalaureate cohort was 34% by 2003 because of their high rates of teachers who did not teach and low initial employment rates. Twenty-nine percent of the 1998 undergraduate cohort was lost within five years for the same reasons. Although alternatively certified teachers had both low rates of not teaching and high

initial employment rates, their high annual attrition rates caused 34% of them to be lost within five years.

Certainly many of these problems and differences have to do with where these teachers are placed, what they teach, and how much support they receive from their schools or districts. However, these data do seem to suggest the importance of improving initial (i.e. first year after certification) employment as well as lowering annual attrition. If the number of teachers who did not teach had been cut in half, it would have put over 2,000 certified teachers in classrooms in the last five years. If the first year employment rates of undergraduate and post-baccalaureate programs were improved to 90%, as seen with alternative certification programs, there would be over 2,000 additional teachers who had taught in classrooms each consecutive year after certification.

The information provided here indicates that nontraditional routes to certification are becoming important influences on teacher preparation in the state, and that teachers from these programs differ from those trained in more traditional programs in many important ways. However, this report offers only an initial analysis of emerging trends in teacher production and retention in Texas. More thorough analysis will shed more light on what can be expected from preparation programs in the coming years, as well as how our system of educator preparation and support can be improved to meet new demands and respond to new challenges.