

CRITICAL TEACHER SHORTAGE AREAS

2006-2007

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**METHODOLOGY FOR THE IDENTIFICATION OF
TEACHER SHORTAGE AREAS
2006-07**

Section 1012.07, Florida Statutes, requires that the State Board of Education annually identify areas of critical teacher shortage. This list of shortage areas is used in implementing the Critical Teacher Shortage Tuition Reimbursement Program and the Critical Teacher Shortage Student Loan Forgiveness Program. State Board of Education Rule 6A-20.0131 (2) further provides that:

In accordance with procedures approved by the Commissioner, a list of critical teacher shortage areas shall be prepared based on consideration of current supply and demand information related to Florida public school instructional personnel including but not limited to:

- (a) The number and percentage of vacant positions in each teaching discipline;*
- (b) The number and percentage of positions filled by teachers not certified in the appropriate field;*
- (c) The projected annual supply of graduates of state approved Florida teacher education programs for each discipline.*

Based on the information outlined above, the following subject fields are being recommended to the State Board of Education for adoption as the critical teaching areas for 2006-07, the same fields as approved for 2005-06:¹

- **middle and high school level mathematics;**
- **middle and high school level science;**
- **reading;**
- **exceptional student education programs (ESE);**
- **English for speakers of other languages (ESOL);**
- **foreign languages;**
- **school psychologists; and**
- **technology education/industrial arts.**

Shortages during Fall 2004

Each fall the Department of Education surveys the school districts to determine the number of teaching positions filled (new hires) from July 1 to November 1.² Results from this survey provide two indicators of fields currently facing critical shortages: the number of new hires as a percentage of teachers in each field and the number of positions filled by teachers who lack appropriate certification. A third measure of teacher shortages is the number of teachers currently teaching courses in subjects in which they are not certified.

¹ See page 15 for the list of the critical teacher shortage areas for 1984-85 through 2005-06.

² New hires are new to the district, but may have taught in another district in prior years and, therefore, may not be new to Florida public schools.

Number of New Hires

According to the fall 2004 new hires survey, 20,010 classroom teachers and 879 other instructional personnel were hired between July 1 and November 1, higher than any previous year and an increase of 30 percent over fall 2002, two years earlier. The new hires represented 12.6 percent of all classroom teachers, slightly lower than the 13.1 percent experienced in fall 2003, but higher than the 10-11 percent in earlier years. (See Table 1.) Fall 2003 marked the beginning of the implementation of the class size amendment to the State Constitution. Therefore, it is not surprising that the percentage of new hires hit its highest point that year and receded slightly in fall 2004.

| | 2001 | 2002 | 2003 | 2004 |
|-----------------------------|---------|---------|---------|---------|
| Fall New Hires | 14,411 | 15,388 | 19,317 | 20,010 |
| Classroom Teachers | 136,888 | 141,004 | 147,957 | 158,625 |
| As a Percentage of Teachers | 10.5 | 10.9 | 13.1 | 12.6 |

Table 2 shows the number of new hires as a percentage of the estimated number of teachers for all of the critical teacher shortage areas. Subject fields with the highest percentages of positions filled include emotionally handicapped (EH), autistic, varying exceptionalities (VE), science, foreign languages, and preK handicapped.

| Subject Fields | New Hires | Estimated Number of Teachers | New Hires as a Percentage of Teachers |
|---------------------------------|-----------|------------------------------|---------------------------------------|
| Reading | 440 | 4,982 | 8.8 |
| Math | 1,363 | 10,410 | 13.1 |
| Science | 1,263 | 8,730 | 14.5 |
| Foreign Languages | 360 | 2,498 | 14.4 |
| ESOL | 246 | 5,505 | 4.5 |
| Industrial Arts/Technology Educ | 88 | 752 | 11.7 |
| Mentally Handicapped | 128 | 1,494 | 8.6 |
| Specific Learning Disabled | 278 | 2,134 | 13.0 |
| Emotionally Handicapped | 224 | 1,200 | 18.7 |
| Varying Exceptionalities | 1,645 | 10,361 | 15.9 |
| Orthopedically Impaired | 7 | 216 | 3.2 |
| Hospital/Homebound | 15 | 383 | 3.9 |
| Speech Impaired | 271 | 2,841 | 9.5 |
| Hearing Impaired | 46 | 365 | 12.6 |
| Visually Impaired | 15 | 226 | 6.6 |
| Autistic | 100 | 629 | 15.9 |
| Severely Emot. Disturbed | 107 | 832 | 12.9 |
| Profoundly Mentally Handi. | 40 | 381 | 10.5 |
| Occupational/Physical Therapy | 36 | 744 | 4.8 |
| PreK Handicapped | 116 | 810 | 14.3 |
| Gifted | 123 | 2,684 | 4.6 |
| Exceptional Other | 42 | 324 | 13.0 |
| Total Exceptional | 3,193 | 25,624 | 12.5 |
| School Psychologist | 84 | 1,273 | 6.6 |

Newly-Hired Out-of-Field Teachers

A second indicator of teacher shortages used to identify critical teaching fields is the percentage of newly hired teachers who were not certified in the field that they were assigned to teach. Overall, 10.7 percent of the new hires in fall 2004 were not appropriately certified, lower than recent years. (See Table 3.)

| | 1996 | 1998 | 2000 | 2002 | 2003 | 2004 |
|---------------------------|------|------|------|------|------|------|
| Basic Fields | 8.4 | 10.2 | 10.2 | 12.3 | 8.9 | 8.9 |
| Exceptional Student Educ. | 22.2 | 27.1 | 30.0 | 29.9 | 22.1 | 19.8 |
| Vocational | 9.0 | 11.6 | 15.3 | 9.9 | 15.3 | 10.0 |
| Total Classroom | 11.3 | 13.5 | 14.2 | 15.8 | 11.5 | 10.7 |

Some of the reasons districts gave for the lower percentages the last two years were:

1. As a by-product of the emphasis on hiring only “highly qualified teachers,” as defined by the Federal *No Child Left Behind Act of 2001*, districts made a special effort to locate appropriately certified teachers. Some districts did not permit their Title 1 schools to hire **any** out-of-field teachers.
2. The focus on smaller classes in grades K-3 resulted in districts hiring significantly more teachers certified in elementary education, typically easier to find than teachers certified in critical teacher shortage areas.
3. The collapsing of such certification areas as mentally handicapped, specific learning disabled, emotionally handicapped, varying exceptionalities, and related fields into one category, *exceptional student education*, has made it easier to find appropriately certified teachers for these areas. Similarly, the change in elementary certification coverage from 1-to-6 to K-to-6 has made it easier to recruit kindergarten teachers in field.
4. Statutes now enable teacher applicants to document mastery of subject area knowledge, required for issuance of a Temporary or Professional Certificate, by achieving a passing score on a subject area examination. This has expanded certification options to those with academic degrees who have not completed an approved teacher education program.

ESE programs continue to experience serious shortages. Despite the decreases in out-of-field teachers hired in fall 2003 and 2004, the percentage continues to be significantly higher than other areas. Nearly one out of every five ESE teachers hired was not certified in the appropriate field.

Table 4 displays information on the number of new hires in fall 2004 for each of the fields being recommended as critical teaching areas. As shown in Column 3:

- One fourth or more of the new hires were in gifted and severely emotionally disturbed (SED). Principals sometimes fill such positions with experienced subject field teachers who lack the course work in gifted, but who later satisfy requirements for endorsement in this field, thus qualifying for tuition reimbursement.

| Subjects | 1 New Hires | 2 New Hires Not Certified in the Appropriate Field | 3 Percentage |
|---------------------------------|----------------|---|-----------------|
| Reading | 440 | 75 | 17.0 |
| Math | 1,363 | 163 | 12.0 |
| Science | 1,263 | 155 | 12.3 |
| Foreign Languages | 360 | 37 | 10.3 |
| ESOL | 246 | 55 | 22.4 |
| Industrial Arts/Technology Educ | 88 | 12 | 13.6 |
| Mentally Handicapped | 128 | 23 | 18.0 |
| Specific Learning Disabled | 278 | 57 | 20.5 |
| Emotionally Handicapped | 224 | 50 | 22.3 |
| Varying Exceptionalities | 1,645 | 352 | 21.4 |
| Orthopedically Impaired | 7 | 2 | 28.6 |
| Hospital/Homebound | 15 | 9 | 60.0 |
| Speech Impaired | 271 | 8 | 3.0 |
| Hearing Impaired | 46 | 2 | 4.3 |
| Visually Impaired | 15 | 0 | 0.0 |
| Autistic | 100 | 17 | 17.0 |
| Severely Emot. Disturbed | 107 | 35 | 32.7 |
| Profoundly Mentally Handi. | 40 | 3 | 7.5 |
| Occupational/Physical Therapy | 36 | 2 | 5.6 |
| PreK Handicapped | 116 | 10 | 8.6 |
| Gifted | 123 | 58 | 47.2 |
| Exceptional Other | 42 | 3 | 7.1 |
| Total Exceptional | 3,193 | 631 | 19.8 |
| School Psychologist | 84 | 0 | 0.0 |

- At least one fifth of the new hires in ESOL, EH, VE, and specific learning disabilities (SLD) did not have the appropriate certification.
- Approximately one sixth of the new hires in mentally handicapped (MH), reading, and autistic were hired out of field.
- Typically, few out-of-field teachers are hired in the areas of speech, hearing and visually impaired, and school psychology because of the highly specialized nature of these areas.

Teachers Currently Teaching in Areas in Which They Are Not Certified

A third indicator of teacher shortage is the number of teachers currently teaching who lack appropriate certification. As shown in Table 5, the percentage of inappropriately certified teachers in these critical areas includes 39 percent in ESOL, 22 percent in technology education, 15 percent in reading, 14 percent in gifted, 10-13 percent in math, science, foreign languages, and EH, and 8-9 percent in SED, school psychology, and SLD.

Table 5
 Estimated Number of Teachers
 Not Certified in the Area in Which They Are Teaching
 Critical Teacher Shortage Areas - Fall 2004
 Ranked by Percentage Not Appropriately Certified

| Subject Field | Number Teachers | Est. FTE Teachers Not Approp. Certified | Percentage Not Approp. Certified |
|----------------------------------|-----------------|---|----------------------------------|
| ESOL | 5,505 | 2,157 | 39.2 |
| Industrial Arts/Technology Educ. | 752 | 164 | 21.8 |
| Reading | 4,982 | 753 | 15.1 |
| Gifted | 2,684 | 374 | 13.9 |
| Math | 10,410 | 1,302 | 12.5 |
| Science | 8,730 | 1,004 | 11.5 |
| Foreign Languages | 2,498 | 275 | 11.0 |
| Emotionally Handicapped | 1,200 | 115 | 9.6 |
| Severely Emotionally Disturbed | 832 | 74 | 8.9 |
| School Psychologist | 1,273 | 101 | 7.9 |
| Specific Learning Disabled | 2,134 | 169 | 7.9 |
| Physically Impaired | 216 | 13 | 6.0 |
| Varying Exceptionalities | 10,361 | 571 | 5.5 |
| Mentally Handicapped | 1,494 | 78 | 5.2 |
| Autistic | 629 | 33 | 5.2 |
| Profoundly Mentally Handicapped | 381 | 14 | 3.7 |
| Hearing Impaired | 365 | 11 | 3.0 |
| Visually Impaired | 226 | 3 | 1.3 |
| Speech Impaired | 2,841 | 22 | 0.8 |

Table 6 shows the trends since 2000 for ESE programs. Although the percentage of teachers teaching out of field in gifted, EH, SED, and SLD continue to be higher than other fields, the percentages are lower than in earlier years. As already mentioned, teachers are not typically hired out of field in speech because of the highly specialized nature of this area. Although certification options are available for speech professionals at the bachelor's level, these are time limited. The Critical Teacher Shortage Tuition Reimbursement Program is used to assist these teachers to pursue their required master's degree. There continues to be a shortage of speech teachers at the master's level to perform specific duties and to direct those at the bachelor's level.

Table 6
 Percentage of Teachers Not Certified in the Appropriate Field
 Selected Exceptional Student Education Programs

| Subject Fields | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------|------|------|------|------|------|
| Mentally Handi. | 11.0 | 11.7 | 11.4 | 8.5 | 5.2 |
| Specific Learning Disab. | 9.2 | 11.5 | 9.3 | 6.4 | 7.9 |
| Emotionally Handi. | 18.6 | 21.7 | 17.8 | 13.5 | 9.6 |
| Varying Excep. | 17.5 | 17.1 | 17.6 | 12.4 | 5.5 |
| Speech Impaired | 0.9 | 0.9 | 1.0 | 0.7 | 0.8 |
| Hearing Impaired | 4.1 | 5.3 | 7.4 | 2.0 | 2.9 |
| Visually Impaired | 9.1 | 6.5 | 3.0 | 1.6 | 1.2 |
| Autistic | 8.3 | 11.9 | 13.3 | 8.3 | 5.2 |
| Profoundly Ment. Handi. | 12.0 | 9.7 | 12.0 | 7.6 | 3.7 |
| Severely Emot. Disturbed | 17.5 | 17.4 | 19.1 | 13.3 | 8.9 |
| Gifted | 16.2 | 16.0 | 25.8 | 26.7 | 13.9 |

Components of Demand for New Teachers

The gap between supply and demand for teachers in these shortage areas needs to be put in context with the broader picture of teacher shortages. In the past, Florida school districts have faced the challenge of filling more than 16,000 teacher positions. By 2004 that number had increased to approximately 22,500. Historically, two trends have largely determined the size of this challenge: teacher turnover and student enrollment. Fall 2003 ushered in a third challenge: finding additional teachers to lower class size in core academic subjects.

Teacher Turnover

Based on information from the school districts in the End of Year Survey (Staff Information Data Base), 9.8 percent of Florida's teachers left the classroom in 2002-03 and 2003-04, higher than any other prior year. (See Table 7.) The largest category by far is the number of teachers resigning voluntarily short of retirement, what has been termed as education's revolving door. In 2003-04 resignations made up two thirds of the total.

| Table 7 | | | | | | |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Number of Terminations - Classroom Teachers | | | | | | |
| | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
| Resignations | 7,350 | 7,080 | 8,000 | 8,889 | 8,538 | 9,660 |
| Retirements | 1,540 | 1,647 | 1,811 | 2,102 | 2,706 | 2,260 |
| Other Reasons* | 2,229 | 1,822 | 2,063 | 2,318 | 2,507 | 2,608 |
| Total | 11,119 | 10,549 | 11,874 | 13,309 | 13,751 | 14,528 |

| Teacher Terminations as a Percentage of the Teacher Workforce | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 |
| Resignations | 5.67 | 5.34 | 5.95 | 6.49 | 6.06 | 6.53 |
| Retirements | 1.19 | 1.24 | 1.35 | 1.54 | 1.92 | 1.53 |
| Other Reasons* | 1.72 | 1.37 | 1.53 | 1.69 | 1.78 | 1.76 |
| Total | 8.57 | 7.95 | 8.83 | 9.72 | 9.76 | 9.82 |

Trends in Teacher Retirements

One fifth of Florida's classroom teachers were born before 1950 and are thus age 55 or older. Another fifth were born between 1951 and 1958 and are age 47 or older. (See Figure 1 and Table 8.) As shown in Table 7, the state has already begun to experience significant increases in the number of teacher retirements, with the likelihood that retirements will reach unprecedented heights in the decade following 2006.

The age groups with the most job stability are teachers in their 40s and early 50s. The magnitude of the retirements that began in 2003 is likely to be all the greater because by then mid-life teachers will represent teacher cohorts which were much smaller to begin with.

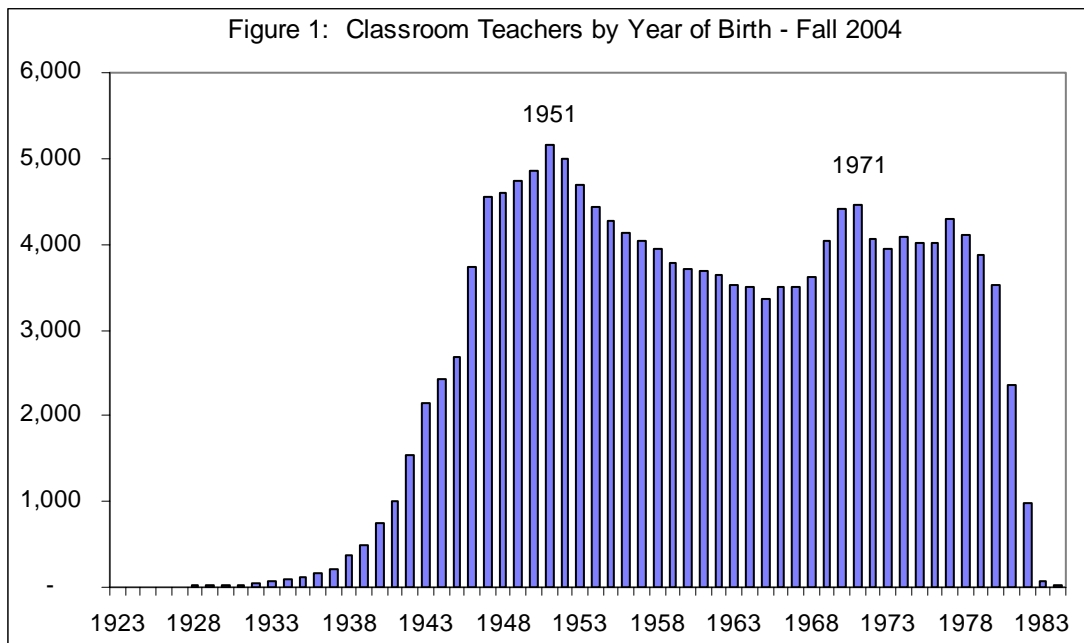


Table 8
Classroom Teachers by Year of Birth - Fall 2004

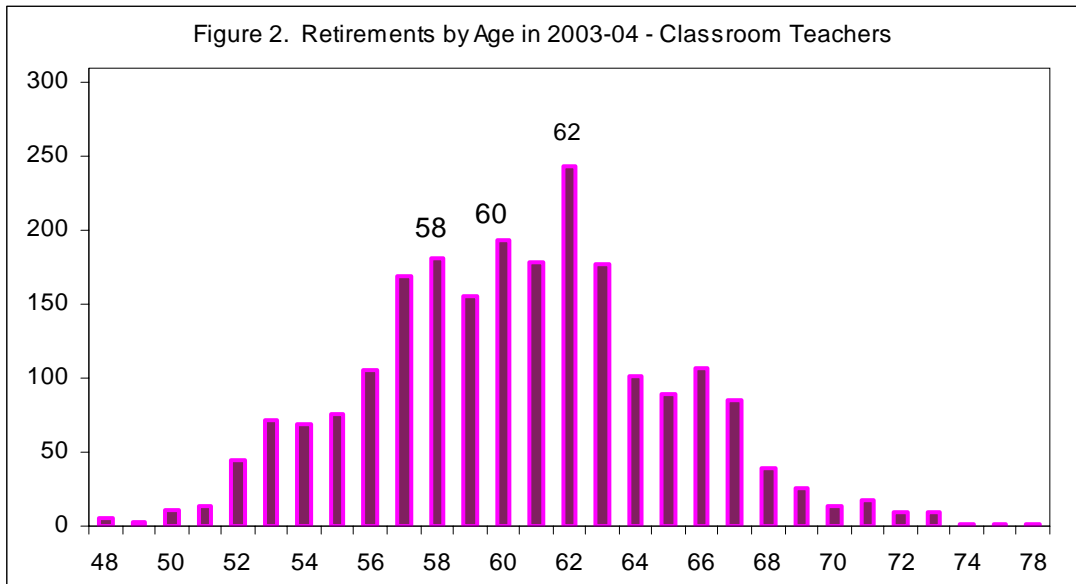
| Year | Number | Year | Number | Year | Number | Year | Number |
|------|--------|------|--------|------|--------|------|--------|
| 1924 | 3 | 1939 | 498 | 1955 | 4,267 | 1970 | 4,412 |
| 1925 | 5 | 1940 | 741 | 1956 | 4,137 | 1971 | 4,451 |
| 1926 | 4 | 1941 | 1,002 | 1957 | 4,033 | 1972 | 4,067 |
| 1927 | 6 | 1942 | 1,534 | 1958 | 3,939 | 1973 | 3,937 |
| 1928 | 16 | 1943 | 2,137 | 1959 | 3,791 | 1974 | 4,087 |
| 1929 | 13 | 1944 | 2,429 | 1960 | 3,713 | 1975 | 4,017 |
| 1930 | 18 | 1945 | 2,685 | 1961 | 3,691 | 1976 | 4,025 |
| 1931 | 27 | 1946 | 3,732 | 1962 | 3,645 | 1977 | 4,293 |
| 1932 | 55 | 1947 | 4,541 | 1963 | 3,520 | 1978 | 4,111 |
| 1933 | 62 | 1948 | 4,594 | 1964 | 3,232 | 1979 | 3,881 |
| 1934 | 86 | 1949 | 4,729 | 1965 | 3,353 | 1980 | 3,517 |
| 1935 | 110 | 1950 | 4,858 | 1966 | 3,493 | 1981 | 2,347 |
| 1936 | 168 | 1951 | 5,150 | 1967 | 3,494 | 1982 | 973 |
| 1937 | 213 | 1952 | 4,999 | 1968 | 3,618 | 1983 | 70 |
| 1938 | 379 | 1954 | 4,447 | 1969 | 4,028 | 1984 | 16 |

Figure 2 and Table 9 show the number of retirements by age. More than half of the teachers retiring in 2003-04 were younger than 60, with most of these younger-age retirements taking place after the teachers reached 30 years of service in Florida public schools. Retirements peak at age 61, not at the assumed age of 65.

During 1999-2000 the retirement trends began to intersect with the age trend. Until that year more teachers had been born in 1947 than in any other year. By 1999 slightly more teachers were born in 1951 than in 1947, indicating that the teachers born in 1947 had begun to retire. The leading edge of the teachers born in 1947 reached 30 years of service in 2000-01, with the rest of the teachers in the 1947-1954 “bubble” reaching this level year by year. The teachers born in 1947 reach age 62 in 2009, but by that year it is likely that half of them will have already retired. Eighty percent of them are expected to retire by the year 2011.

Table 9
Classroom Teachers Who Retired in 2002-03
By Age in Fall 2003

| Age | Number | Age | Number | Age | Number | Age | Number |
|-----|--------|-----|--------|-----|--------|-----|--------|
| 48 | 5 | 55 | 76 | 63 | 178 | 71 | 17 |
| 49 | 3 | 56 | 106 | 64 | 102 | 72 | 9 |
| 50 | 11 | 57 | 169 | 65 | 90 | 73 | 9 |
| 51 | 14 | 58 | 181 | 66 | 107 | 74 | 2 |
| 52 | 44 | 59 | 155 | 67 | 85 | 75 | 1 |
| 53 | 72 | 60 | 194 | 68 | 39 | 78 | 2 |
| 54 | 69 | 61 | 179 | 69 | 26 | 79 | 3 |
| | | 62 | 244 | 70 | 14 | 81 | 2 |



Effect of Enrollment Growth on the Number of Teachers Needed

The second component of the number of new hires each year is the projected number of additional teachers needed to provide for increased enrollments. Florida has seen steady enrollment growth in preK-12 programs every year since 1982-83. Although the rate of growth is likely to slow over the next ten years, the state may still expect an additional 50,000 or more students each year, requiring more than 3,000 additional teachers each year for enrollment growth alone.

Implementation of the Class Size Amendment and No Child Left Behind

Teacher turnover and enrollment growth will continue to affect the size of the demand for new teachers. Added to these factors is the implementation of the class size amendment passed by Florida voters in 2002 and the federal No Child Left Behind Act, mandating, among other requirements, that there be a highly qualified teacher in every core-subject classroom by 2005-06. These legal mandates have the potential for exacerbating an already serious situation, expanding what has been a teacher shortage in specific subject areas to a more general teacher shortage.

The increased numbers of additional teachers stemming from the implementation of the class size amendment are projected at approximately 4,300 in 2004-05, 2,400 in 2005-06, with a jump to 11,821 in 2006-07, when school wide requirements will go into effect. Class size adjustments will then taper off. The Department has provided technical assistance to districts on implementation of highly qualified teacher requirements under No Child Left Behind. The Department's No Child Left Behind updates are viewable at: <http://www.fldoe.org/NCLB/personnel.asp#04>.

Projected Number of Positions to be Filled in 2006-07

Table 10 shows the projected teacher demand in 2006-07 stemming from each of the three components cited above. For the academic core subjects (math, science, reading, foreign languages, and ESOL), additional teachers that will allow schools to reach class size targets total 46 percent of all positions to be filled and 10 percent of the teachers already in those fields in 2005-06. (Elementary classrooms and language arts, two core subjects not on the critical teacher shortage list, will require 7,372 additional teachers--6,012 to reduce class size in elementary and 1,360 in language arts.)

Among the critical teacher shortage areas, taking into account both core and non-core subjects, 53 percent of the teacher demand will be to replace teachers leaving the classroom or retiring, 28 percent to achieve class size targets, and 19 percent to provide for enrollment growth. Three fourths of the total need in these areas will likely occur in four fields--math, science, and ESE.

| Subject Fields | 1 Projected Number of Teachers 2005-06 | 2006-07 Number Needed | | | 5 Total Positions To Be Filled (Sum Cols 2-4) |
|---------------------------------|--|---|---|---|--|
| | | 2 To Replace Teachers Leaving or Retiring | 3 To Provide for Enrollment Growth | 4 Class Size Adjustment By-School Targets | |
| Math | 10,921 | 1,092 | 215 | 1,136 | 2,443 |
| Science | 9,122 | 1,003 | 180 | 949 | 2,132 |
| Reading | 5,232 | 392 | 115 | 545 | 1,052 |
| Foreign Languages | 2,658 | 266 | 51 | 276 | 593 |
| ESOL | 5,851 | 117 | 131 | 610 | 858 |
| Total Above Fields | 33,784 | 2,870 | 692 | 3,516 | 7,078 |
| Industrial Arts/Technology Educ | 789 | 63 | 15 | 0 | 78 |
| Exceptional Student Education | 16,220 | 1,945 | 341 | 0 | 2,286 |
| Occup/Physical Therapy | 771 | 23 | 17 | 0 | 40 |
| Speech Impaired | 2,943 | 221 | 63 | 0 | 284 |
| Hearing Impaired | 377 | 40 | 9 | 0 | 49 |
| Visually Impaired | 233 | 12 | 5 | 0 | 17 |
| Autistic | 648 | 91 | 13 | 0 | 104 |
| Severely Emot. Disturbed | 857 | 35 | 10 | 0 | 45 |
| Profoundly Mentally Handi. | 391 | 94 | 18 | 0 | 112 |
| Gifted | 2,746 | 96 | 59 | 0 | 155 |
| PreK Handicapped | 834 | 92 | 162 | 0 | 254 |
| Other ESE | 331 | 40 | 8 | 0 | 48 |
| Total ESE | 26,351 | 2,689 | 705 | 0 | 3,394 |
| School Psychologist | 1,308 | 52 | 29 | 0 | 81 |
| Total* | 62,232 | 5,674 | 1,441 | 3,516 | 10,631 |

*All critical teacher shortage area subjects above

Critical Teacher Shortage Area Financial Assistance Programs

The Office of Student Financial Assistance, Florida Department of Education, administers two financial assistance programs aimed at increasing the number of qualified teachers in designated critical teacher shortage areas, both initiated in 1983-84.

The Critical Teacher Shortage Tuition Reimbursement Program provides financial support to qualified teachers by assisting them with the repayment of undergraduate and graduate education courses that will lead to certification in a critical teacher shortage subject area. Eligible applicants may receive payments for up to \$78 per credit hour, for a maximum amount of \$702 and 9 hours per award year. The maximum amount eligible applicants may receive is up to \$2,808 for up to 36 credit hours. Awards are prorated based upon the number of submissions and the amount provided by the Legislature. The average amount awarded in 2004-05 was \$121.

The Critical Teacher Shortage Student Loan Forgiveness Program provides financial assistance to eligible Florida teachers by assisting them in the repayment of undergraduate and graduate educational loans that led to certification in a critical teacher shortage subject area. Eligible applicants may receive an annual award of up to \$2,500 to repay undergraduate loans and \$5,000 for two years to repay graduate loans for support of postsecondary education study. Participants may receive up to a maximum of \$10,000 for the duration of the program. As is true of the Tuition Reimbursement Program, awards are prorated each year. The average amount awarded in 2004-05 was \$696.

Table 11 shows the numbers of Loan Forgiveness awards over the last three years. Approximately three fourths of the Forgiveness Awards have been to teachers in exceptional student education (ESE) programs, with the percentage dropping slightly in 2004-05. The numbers of awards to teachers of math and science are increasing, reaching 11 percent each in 2004-05.

| Critical Teacher Shortage Area | Number | | | Percentage | | |
|----------------------------------|---------|---------|---------|------------|---------|---------|
| | 2002-03 | 2003-04 | 2004-05 | 2002-03 | 2003-04 | 2004-05 |
| Math | 136 | 171 | 269 | 7.4% | 8.1% | 11.1% |
| Science | 179 | 210 | 273 | 9.8% | 10.0% | 11.3% |
| Reading | 0 | 7 | 15 | 0.0% | 0.3% | 0.6% |
| Foreign Languages | 10 | 14 | 30 | 0.5% | 0.7% | 1.2% |
| ESOL | 44 | 47 | 54 | 2.4% | 2.2% | 2.2% |
| Industrial Arts/Technology Educ. | 11 | 11 | 13 | 0.6% | 0.5% | 0.5% |
| Total Exceptional Student Educ. | 1,454 | 1,625 | 1,723 | 79.3% | 77.2% | 71.3% |
| School Psychologist | 0 | 21 | 38 | 0.0% | 1.0% | 1.6% |
| Total Disbursed Count | 1,834 | 2,106 | 2,415 | 100% | 100% | 100% |

The proportion of awards to ESE teachers under the Tuition Reimbursement program has dropped over the last few years, from 60 percent in 2002-03 to 37 percent in 2004-05. (See Table 12.) At the same time the proportion of awards to teachers seeking certification or an endorsement in reading now absorbs 31 percent of the awards, almost as large as those in ESE.

More detailed information on awards in both programs may be seen on Table 13.

Table 12
Tuition Reimbursement Awards By Category

| Critical Teacher Shortage Area | Number | | | Percentage | | |
|----------------------------------|------------|------------|------------|-------------|-------------|-------------|
| | 2002-03 | 2003-04 | 2004-05 | 2002-03 | 2003-04 | 2004-05 |
| Math | 110 | 64 | 63 | 16.9% | 12.1% | 11.1% |
| Science | 69 | 53 | 54 | 10.6% | 10.0% | 9.5% |
| Reading | 0 | 129 | 175 | 0.0% | 24.4% | 30.8% |
| Foreign Languages | 13 | 13 | 17 | 2.0% | 2.5% | 3.0% |
| ESOL | 43 | 22 | 16 | 6.6% | 4.2% | 2.8% |
| Industrial Arts/Technology Educ. | 22 | 19 | 17 | 3.4% | 3.6% | 3.0% |
| Total Exceptional Student Educ. | 392 | 220 | 210 | 60.4% | 41.6% | 36.9% |
| School Psychologist | 0 | 9 | 17 | 0.0% | 1.7% | 3.0% |
| Total Disbursed Count | 649 | 529 | 569 | 100% | 100% | 100% |

Table 13
Critical Teacher Shortage Awards By Certification Area*

| Critical Teacher Shortage Area | 2002-03 | | 2003-04 | | 2004-05 | |
|--------------------------------|------------------|-----------------------|------------------|-----------------------|------------------|-----------------------|
| | Loan Forgiveness | Tuition Reimbursement | Loan Forgiveness | Tuition Reimbursement | Loan Forgiveness | Tuition Reimbursement |
| Math - Middle Grades | 32 | 55 | 61 | 21 | 113 | 23 |
| Math - 6-12 | 104 | 55 | 110 | 43 | 156 | 40 |
| Science - Biology | 63 | 34 | 94 | 18 | 111 | 22 |
| Science - Middle Grades | 82 | 25 | 73 | 20 | 114 | 22 |
| Science - Chemistry | 19 | 2 | 24 | 8 | 25 | 6 |
| Science - Early Science | 5 | 4 | 4 | 4 | 9 | 3 |
| Science - Physics | 10 | 4 | 15 | 3 | 14 | 1 |
| Reading | 0 | 0 | 7 | 121 | 15 | 149 |
| Reading Endorsement | 0 | 0 | 0 | 8 | 0 | 26 |
| Spanish | 8 | 11 | 10 | 11 | 20 | 13 |
| French | 2 | 1 | 3 | 1 | 8 | 3 |
| Latin | 0 | 0 | 0 | 1 | 1 | 1 |
| German | 0 | 1 | 1 | 0 | 1 | 0 |
| ESOL | 44 | 39 | 47 | 14 | 54 | 15 |
| ESOL Endorsement | 0 | 4 | 0 | 8 | 0 | 1 |
| Industrial Arts/Tech. Educ. | 11 | 22 | 11 | 19 | 13 | 17 |
| Mentally Handicapped | 97 | 7 | 83 | 2 | 83 | 1 |
| Emotionally Handicapped | 207 | 23 | 170 | 6 | 174 | 1 |
| Specific Learning Disabled | 273 | 34 | 162 | 7 | 165 | 4 |
| Varying Exceptionalities | 599 | 227 | 649 | 55 | 630 | 26 |
| Exceptional Student Educ. | 0 | 0 | 265 | 70 | 365 | 98 |
| Speech - Language Impaired | 252 | 49 | 263 | 46 | 250 | 41 |
| Hearing Impaired | 15 | 4 | 20 | 3 | 18 | 3 |
| Visually Impaired | 7 | 4 | 10 | 0 | 10 | 1 |
| Physically Impaired | 4 | 2 | 2 | 1 | 2 | 0 |
| Autism | 0 | 0 | 1 | 0 | 26 | 0 |
| Severe or Profound Handicp. | 0 | 1 | 0 | 1 | 0 | 0 |
| Pre-K Handicapped | 0 | 5 | 0 | 4 | 0 | 0 |
| Gifted | 0 | 36 | 0 | 25 | 0 | 35 |
| School Psychologist | 0 | 0 | 21 | 9 | 38 | 17 |
| Total Disbursed Count | 1,834 | 649 | 2,106 | 529 | 2,415 | 569 |

*Statistics compiled by the Office of Student Financial Assistance

Among trends shown:

- Most of the science teachers receiving awards seek certification in middle grades science or biology, while few are in areas of the physical sciences—earth science, chemistry, or physics.
- Most awardees in reading are seeking full certification in reading rather than an endorsement in reading. The same is true for ESOL awardees.
- As might be expected, the bulk of the awards to ESE teachers goes to those teaching in the large programs now being collapsed into ESE—MH, EH, SLD, and VE.
- As stated in the section on out-of-field teachers, critical teacher awards are particularly important to speech therapists, many of whom enter the classroom without having received their master’s degree, a requirement for full certification in that field. Surprisingly, however, most of these awards are for loan forgiveness, as opposed to tuition reimbursement, with a larger spread than is true for the awards in other areas.
- Although the numbers of award recipients who are teaching technology education are small, they are important since few technology education teachers enter the classroom from traditional teacher education programs.

Teacher Supply

Graduates from Traditional Teacher Education Programs

Statistics on the number of teacher candidates completing traditional institutional-based teacher education programs used in this report are based on a survey of graduates completed annually by the education deans and chairpersons of the 30 institutions in Florida with approved teacher education programs. Table 14 shows the numbers of graduates in shortage areas over the last five years. An analysis of the data presented pinpoints the following trends:

- Over the last five years, middle and high schools have seen sizeable increases in enrollments. Not only have math education and science education not kept pace, but the numbers of graduates have been decreasing, especially when compared to the numbers ten years ago. (See Figure 3.) As was seen with respect to the statistics on financial assistance awards, most of the science education graduates complete programs in biology rather than in the physical sciences, while the out-of-field statistics are highest in earth science and physics.

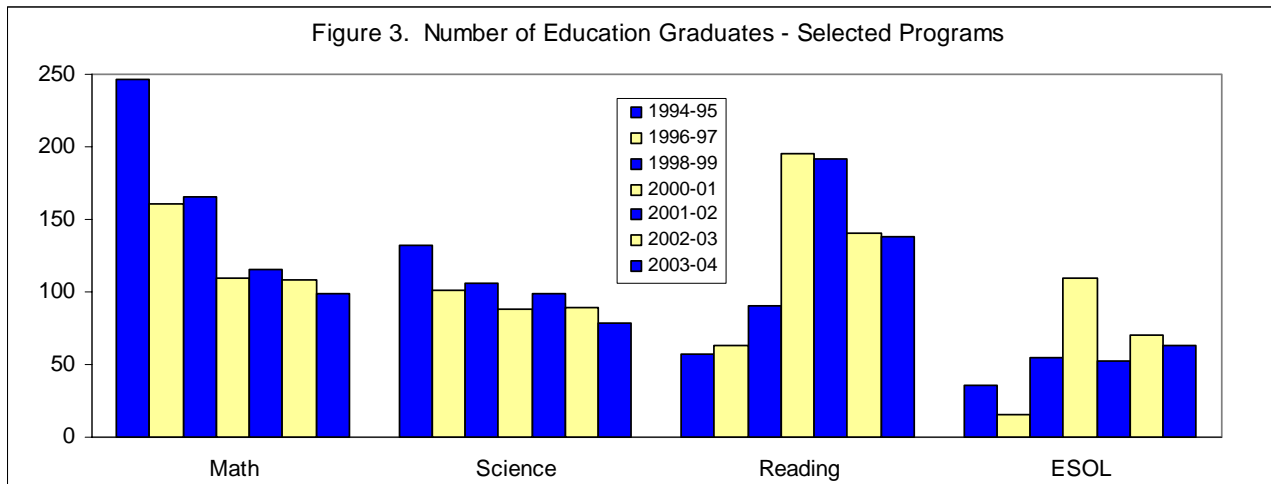


Table 14
Number of Graduates - Teacher Education Programs in Critical Shortage Fields

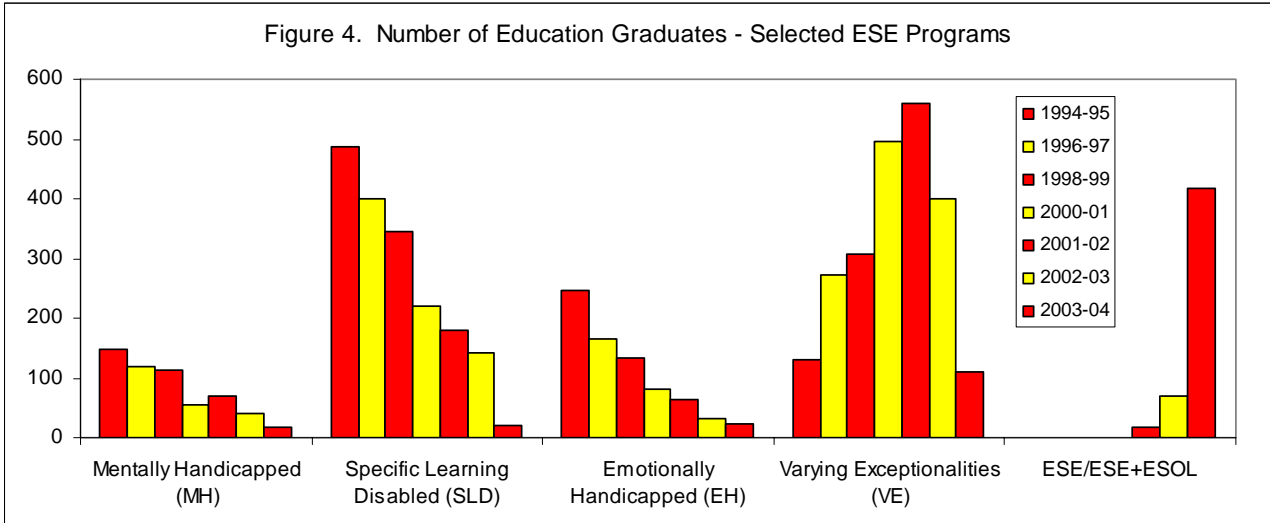
| Subject Fields | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | % Difference 02-03 to 03-04 |
|--|---------|---------|---------|---------|---------|--------------------------------|
| Math | 125 | 109 | 115 | 108 | 99 | -8.3 |
| Science | 116 | 88 | 98 | 89 | 79 | -11.2 |
| Reading | 92 | 195 | 192 | 140 | 138 | -1.4 |
| Foreign Languages | 22 | 19 | 26 | 14 | 23 | 64.3 |
| ESOL | 148 | 110 | 52 | 70 | 63 | -10.0 |
| Mentally Handicapped | 75 | 55 | 70 | 41 | 17 | - |
| Specific Learning Disabled | 260 | 221 | 180 | 142 | 19 | - |
| Emotionally Handicapped | 98 | 82 | 64 | 33 | 22 | - |
| Varying Exceptionalities | 331 | 495 | 560 | 395 | 109 | - |
| Orthopedically Impaired | 9 | 0 | 0 | 0 | 0 | - |
| Exceptional Student Educ. (ESE) | 0 | 0 | 0 | 4 | 168 | - |
| ESE + ESOL | 0 | 0 | 18 | 65 | 248 | - |
| Total Above Programs | 773 | 853 | 892 | 680 | 583 | -14.3 |
| Speech Impaired* | - | - | - | - | - | - |
| Hearing Impaired | 5 | 5 | 2 | 11 | 6 | -45.5 |
| Visually Impaired | 7 | 9 | 8 | 6 | 6 | 0.0 |
| PreK Handicapped | 27 | 20 | 44 | 39 | 35 | -10.3 |
| Gifted | 5 | 5 | 4 | 8 | 5 | -37.5 |
| Dual ESE Programs | 102 | 75 | 76 | 131 | 59 | -55.0 |
| Total All ESE Programs | 919 | 967 | 1,026 | 875 | 694 | -20.7 |
| Technology Ed/Industrial Arts | 8 | 7 | 10 | 2 | 4 | 100.0 |
| School Psychology | 56 | 39 | 45 | 66 | 82 | 24.2 |
| Total All Above Fields | 1,486 | 1,534 | 1,564 | 1,364 | 1,182 | -13.3 |
| Total (including other classroom programs) | 5,778 | 5,609 | 5,796 | 5,634 | 5,114 | -9.2 |
| Total (Including all instructional programs) | 6,100 | 5,964 | 6,069 | 6,010 | 5,446 | -9.4 |

*Numbers for speech are not shown because consistent data are not available. Speech therapists typically finish their programs outside the colleges of education.

**Does not include Educational Leadership.

- The larger numbers of graduates in reading in 2000-01 and 2001-02 were an outgrowth of Florida's many-faceted efforts to boost reading skills at all levels.
- Increases in ESOL are being achieved through a growing number of dual programs, such as programs in elementary education and ESOL, or ESE and ESOL. An endorsement in ESOL is required for teaching classes that include students who are not proficient in English.
- Figure 4 illustrates the effect of collapsing of the MH, SLD, EH, and VE into one category, *exceptional student education*. The new category notwithstanding, the numbers of graduates in ESE are down, despite the ongoing need for additional teachers.
- The number of graduates in foreign languages remains low, especially when compared to the number of new hires in this field each year. However, it is likely that a number of foreign language teachers with degrees in a modern or classical foreign language enter the classroom via the alternative certification route (see below).
- Few graduates are shown for gifted and technology education. Most teachers in gifted programs become certified by means of an add-on to existing certification, not included in the statistics used here. As pointed out in an earlier section, few technology education teachers enter the classroom via a traditional teacher education program.

Figure 4. Number of Education Graduates - Selected ESE Programs



Studies that track teacher education graduates to the classroom indicate that, of those seeking initial certification (that is, those who were not already teaching prior to completing a program), about 61 percent taught in Florida public schools the year following graduation. Fifty-eight percent of the completers were still teaching four years later. No information is available on the number of education graduates who were teaching in nonpublic schools or teaching out of state.

Completers of Alternative Certification Programs

In addition to these graduates of traditional teacher education programs, 666 teachers completed district-based alternative certification programs in 2003-04, 281 of whom were in one of the shortage areas. (See Table 15.) Alternative certification programs contributed significant proportions of the teacher candidates in math, science, and foreign languages. Initial tracking studies show that nearly 90 percent of these completers are still in the classroom three years later.

Table 15
Teacher Education Program Completers
2003-04

| Subject Field | Traditional Teacher Education Programs | District Alternative Certification Programs | Total |
|--------------------------------|--|---|-------|
| Math | 99 | 84 | 183 |
| Science | 79 | 105 | 184 |
| Reading | 138 | 5 | 143 |
| Foreign Languages | 23 | 23 | 46 |
| ESOL | 63 | 12 | 75 |
| Industrial Arts/Technology Ed. | 4 | 0 | 4 |
| Exceptional Education Programs | 583 | 56 | 639 |
| Hearing Impaired | 6 | 0 | 6 |
| Visually Impaired | 6 | 0 | 6 |
| PreK Handi. | 35 | 0 | 35 |
| Gifted | 5 | 3 | 8 |
| Dual Programs in Excep. | 59 | 0 | 59 |
| Total Exceptional | 694 | 59 | 753 |
| School Psychologist | 82 | 0 | 82 |
| Total Above Shortage Areas | 1,182 | 288 | 1,470 |
| Total Classroom | 5,114 | 662 | 5,776 |
| Total Classroom + Other | 5,446 | 666 | 6,112 |

Projections of Program Completers

Each year's teacher graduate survey covers the number of graduates for the most recent year (2003-04, in the case of the 2004 survey used here) and three years of the projected number of graduates. Table 16 shows the projected numbers through 2006-07. For all fields, including those not in this report, deans and chairpersons of Florida's teacher education institutions projected a 7-percent increase in 2004-05, followed by a 2-percent decrease in 2005-06 and no change in 2006-07, for an overall increase of 4 percent between 2003-04 and 2006-07. It remains to be seen whether these increases will materialize. Based on forecasts of the number of graduates three years later, the education institutions over-projected the number of graduates by 21 percent in 2002-03 and by 16 percent in 2003-04.

Table 16
Teacher Education Program Completers
2003-2004 - 2006-07

| Subject Field | 2003-04 | P R O J E C T E D | | | 2003-04 to 2006-07 |
|--------------------------------|---------|-------------------|---------|---------|-----------------------|
| | | 2004-05 | 2005-06 | 2006-07 | |
| Math | 99 | 135 | 119 | 133 | 34.3 |
| Science | 79 | 92 | 100 | 94 | 19.0 |
| Reading | 138 | 196 | 145 | 210 | 52.2 |
| Foreign Languages | 23 | 21 | 20 | 25 | 8.7 |
| ESOL | 63 | 42 | 37 | 56 | -11.1 |
| Industrial Arts/Technology Ed. | 4 | 4 | 0 | 0 | - |
| Exceptional Education Programs | 583 | 614 | 534 | 563 | -3.4 |
| Hearing Impaired | 6 | 10 | 10 | 12 | 100.0 |
| Visually Impaired | 6 | 3 | 6 | 6 | 0.0 |
| PreK Handi. | 35 | 35 | 37 | 40 | 14.3 |
| Gifted | 5 | 13 | 23 | 22 | 340.0 |
| Dual Programs in Excep. | 59 | 40 | 66 | 66 | 11.9 |
| Total Exceptional | 694 | 715 | 676 | 709 | 2.2 |
| School Psychologist | 82 | 82 | 88 | 93 | 13.4 |
| Total Classroom | 5,114 | 5,452 | 5,325 | 5,288 | 3.4 |
| Total Classroom + Other | 5,446 | 5,808 | 5,673 | 5,682 | 4.3 |

Among critical shortage fields:

- Increases are projected in math and science, despite the fact that there has been little or no growth in these fields over the last five years.
- Similarly, growth is projected for reading and school psychology.
- Decreases are projected for ESOL. At least partially offsetting the projected decrease is an expanding number of dual programs that lead to an endorsement in ESOL, while fulfilling certification requirements in another area, such as ESE or English or social studies. ESOL endorsements will soon be required for all programs in elementary education, pre-K primary, ESE, and English.
- Very little growth is projected for ESE.

Although projections are unavailable for new teachers entering the classroom via alternative certification programs, the numbers are expected to increase over the next few years, especially with the addition of community college-based programs. However, it is unlikely that the additions will be sufficient to meet the demand, especially given the increased demand in 2006-07.

Projected Shortages for 2006-07

Table 17 compares (1) the number of Florida teacher education graduates for 2003-04 and projected number for 2005-06 (Columns 1 and 4), with (2) the number of new hires in fall 2004 (Column 2) and the projected number in 2006-07 (Column 5). Columns 3 and 6 show the numbers of teacher education graduates as percentages of the numbers of new hires. Among the critical fields, Table 17 shows:

- The number of graduates in 2003-04 represented less than 17 percent of the number of new hires in fall 2004 (1 graduate to every 6 new hires). This number is projected to decrease to 11 percent in 2006-07.

| Subject Fields | 1 Teacher Education Graduates 2003-04 | 2 New Hires Fall 2004 | 3 % Grads to New Hires (1/2) | 4 Projected Florida Education Graduates 2005-06 | 5 Projected Number Positions To Be Filled 2006-07 | 6 % Grads to New Hires (4/5) |
|----------------------------------|---|-----------------------------|---|--|--|---|
| Math | 99 | 1,363 | 7.3% | 119 | 2,443 | 4.9% |
| Science | 79 | 1,263 | 6.3% | 100 | 2,132 | 4.7% |
| Reading | 138 | 440 | 31.4% | 145 | 1,052 | 13.8% |
| Foreign Languages | 23 | 360 | 6.4% | 20 | 593 | 3.4% |
| ESOL | 63 | 246 | 25.6% | 37 | 858 | 4.3% |
| Industrial Arts/Technology Educ. | 4 | 88 | 4.5% | 0 | 78 | 0.0% |
| Exceptional Student Education | 583 | 2,297 | 25.4% | 534 | 2,286 | 23.4% |
| Occupational/Physical Therapy | - | 36 | - | - | 40 | - |
| Speech Impaired* | - | 271 | - | - | 284 | - |
| Hearing Impaired | 6 | 46 | 13.0% | 10 | 49 | 20.4% |
| Visually Impaired | 6 | 15 | 40.0% | 6 | 17 | 35.3% |
| Autistic | - | 100 | - | - | 104 | - |
| Severely Emot. Disturbed | - | 107 | - | - | 112 | - |
| Profoundly Mentally Handi. | - | 40 | - | - | 45 | - |
| PreK Handicapped | 35 | 116 | 30.2% | 37 | 254 | 14.6% |
| Gifted | 5 | 123 | 4.1% | 23 | 155 | 14.8% |
| Dual Programs in ESE | 59 | - | - | 66 | - | - |
| Exceptional Other | - | 42 | - | - | 48 | - |
| Total Exceptional | 694 | 3,193 | 21.7% | 676 | 3,394 | 19.9% |
| School Psychologist | 82 | 84 | 97.6% | 88 | 81 | 108.6% |
| Total Above Shortage Areas | 1,182 | 7,037 | 16.8% | 1,185 | 10,631 | 11.1% |
| Total Classroom | 5,114 | 20,011 | 25.6% | 5,325 | 31,183 | 17.1% |
| Total Instructional | 5,446 | 20,891 | 26.1% | 5,673 | 32,425 | 17.5% |

- Given the additional numbers needed to meet class size targets on one hand and the decrease in the numbers of projected teacher education graduates on the other, the gap between the two is widening, especially in math, science, ESOL, and foreign languages, all considered core subjects. In 2006-07 the numbers of projected teacher education graduates represent 5 percent or less of the number of teachers needed in all of these areas. Hopefully, alternative certifications will partially fill that gap.
- The one-to-7 ratio projected for reading programs indicates a more positive trend than other core subjects. However, many of these completers will be seeking endorsement in reading as an adjunct to teaching elementary or language arts rather than aspiring to become reading specialists.
- While the supply of school psychologists is slightly larger than the projected demand, districts rarely hire school psychologists out of field partly because of the legal responsibility these professionals have in identifying students for inclusion in ESE programs.
- A wide gap remains between the number of new hires in the combined ESE programs (2,286 projected new hires) and the projected number of graduates (534). At-risk status depends partially on the depth of the reserve pool in each field. As evidenced by the percentage of inappropriately certified teachers hired each year, ESE programs have perpetually been behind, with the number of graduates never seeming to catch up with the demand.

CRITICAL TEACHER SHORTAGE AREAS
FOR THE YEARS 1984-85 - 2005-06

| | |
|--|--|
| 1984-85 | Math, science, speech therapy, emotionally, industrial arts, foreign languages |
| 1985-86 1986-87 | Math, science, emotionally handicapped, English, foreign languages |
| 1987-88 | Math, science, emotionally handicapped, foreign languages |
| 1988-89 | Math, science, emotionally handicapped, English, foreign languages |
| 1989-90 1990-91 1991-92 | Middle and secondary level science, math, and English; foreign languages; and exceptional education programs serving the handicapped. |
| 1992-93 | Middle and secondary level math and physical sciences; English for speakers of other languages (ESOL); exceptional education programs |
| 1993-94 1994-95 1995-96 | Exceptional education programs; ESOL |
| 1996-97 1997-98 1998-99 1999-00 | Same as 1995-96, with the addition of technology education/industrial arts |
| 2000-01 | Same as 1999-2000, with the addition of middle and secondary mathematics and science |
| 2001-02 | Same as 2000-01 with the addition of foreign languages |
| 2002-03 | Same as 2001-02 with the addition of reading and school psychologist |
| 2003-04 2004-05 2005-06 | Same as 2002-03: middle and high school level mathematics, middle and high school level science, reading, exceptional student education programs (ESE), English for speakers of other languages (ESOL), foreign languages, school psychologists, and technology education/industrial arts. |