

# **Nova Scotia Public Education Teacher Supply and Demand**

---

2007 Update Report



# **Nova Scotia Public Education Teacher Supply and Demand**

2007 Update Report

Nova Scotia Public Education Teacher Supply and Demand : 2007 Update Report

© Crown copyright, Province of Nova Scotia, 2007

The contents of this publication may be reproduced in whole or in part provided the intended use is for non-commercial purposes and full acknowledgment is given to the Nova Scotia Department of Education.

Cataloguing-in-Publication Data

Main entry under title.

Nova Scotia public education teacher supply and demand : 2007 update report / Nova Scotia. Department of Education.

ISBN: 978-1-55457-175-8

1. Public education—Nova Scotia 2. Teacher supply and demand education—Nova Scotia I. Nova Scotia. Department of Education.

331.12313711 – dc22

2007

# Contents

|   |           |
|---|-----------|
| <b>Executive Summary</b> . . . . .  | <b>v</b>  |
| <b>1. Introduction</b> . . . . .  | <b>1</b>  |
| <b>2. Teacher Supply and Demand in Other Jurisdictions and Background</b> . . . . . | <b>3</b>  |
| <b>3. Employment Profile of Nova Scotia Teachers</b> . . . . .                      | <b>5</b>  |
| 3.1 Teacher Employment Status . . . . .   | 5         |
| 3.2 Probationary and Term Teachers . . . . .  | 7         |
| <b>4. Teacher Demand</b> . . . . .  | <b>9</b>  |
| 4.1 The Demand Model . . . . .  | 9         |
| 4.2 Trends in Student Enrolments . . . . .  | 9         |
| 4.3 French Language Instruction . . . . .   | 10        |
| 4.4 Ratio of Students to Teachers . . . . .   | 11        |
| 4.5 Teacher Retirements and Disabilities . . . . .                                  | 12        |
| 4.6 Other Attrition of the Teacher Workforce . . . . .                              | 13        |
| 4.7 Temporary Attrition . . . . .   | 14        |
| 4.8 Long-Term Demand Outlook . . . . .  | 14        |
| <b>5. Teacher Supply</b> . . . . .  | <b>17</b> |
| 5.1 Overview of New Teacher Supply . . . . .  | 17        |
| 5.2 Nova Scotia Teacher Certificates . . . . .                                      | 17        |
| 5.3 Teacher Education Program Capacity, Graduates, and Applications . . . . .       | 19        |
| 5.4 Long-Term Teacher Supply Outlook . . . . .                                      | 20        |
| <b>6. Substitute Teacher Labour Market</b> . . . . .                                | <b>21</b> |
| 6.1 Substitute Teacher Activity . . . . .   | 21        |
| 6.2 Size and Importance of Teacher Workforce . . . . .                              | 21        |
| 6.3 Source of Substitute Teachers . . . . .   | 23        |
| 6.4 Retention of Substitute Teachers . . . . .                                      | 23        |
| <b>7. Integrated View of Regular Teacher Supply and Demand</b> . . . . .            | <b>25</b> |
| <b>8. Demand and Supply by Subject, Specialty, and Administration</b> . . . . .     | <b>29</b> |
| 8.1 Projected Teacher Demand by Subject Area . . . . .                              | 29        |
| 8.2 Projected Teacher Supply by Subject Area . . . . .                              | 31        |
| 8.3 Projected Imbalances . . . . .  | 31        |

|   |            |
|---|------------|
| <b>9. Other Labour Market Considerations . . . . .</b>  | <b>.35</b> |
| 9.1 Earlier Hiring . . . . .  | 35         |
| <b>10. Conclusion . . . . .</b>   | <b>.37</b> |
| <b>Appendix 1: Projected Enrolments by Grade Level and Estimated Teacher FTEs . . . . .</b>   | <b>.39</b> |
| <b>Appendix 2: Age Distribution of Permanent and Probationary Teachers, 2005–06 . . . . .</b> | <b>.40</b> |
| <b>Appendix 3: Teacher Pension Plan Retirement and Disability Assumptions . . . . .</b>       | <b>.41</b> |
| <b>Appendix 4: Secondary Education Endorsation Disciplines . . . . .</b>                      | <b>.43</b> |
| <b>Appendix 5: Early Hiring Job Fair—2005 . . . . .</b>                                       | <b>.44</b> |
| <b>References . . . . .</b>   | <b>.45</b> |

# Executive Summary

## Purpose

This study updates the previous research study, *Nova Scotia Public Education Teacher Supply and Demand*, completed in 2004. This update provides a revised outlook for public education teacher supply and demand. The update is based on the most current data relating to the Nova Scotia labour market for teachers.

## Demand for Teachers in Nova Scotia

The overall number of teachers (noted in full-time equivalents, or FTEs) is not projected to decline significantly. The number of teacher FTEs is projected to decline overall by 729, or 7.9 percent, from 2005–06 (9196 FTEs) to 2014–15 (8467 FTEs).

At current levels, the ratio of the number of students per teacher is expected to decrease due to a projected 15.8 percent decrease in student enrolments.

There is a projected net demand of 3319 new teachers between 2006–07 and 2014–15 to partially replace teachers who

- retire or leave due to disability (estimated at 3334)
- leave public education due to occupational mobility, such as working in other jurisdictions or leaving the labour force (estimated at 666)
- die (estimated at 45)

## Supply of Teachers

The new supply of teachers (qualified new entrants in Nova Scotia public education who are likely to seek teaching positions in the province) is estimated to average 1000 per year through 2014–15.

Annual supply includes 333 Nova Scotians who graduate from teacher education programs in the province who are likely to stay in Nova Scotia to work. Assuming this supply will continue in future years, there will not be an aggregate shortage of teachers in Nova Scotia, but some rural and other geographic areas across the province may experience difficulties attracting teachers, especially in specific subjects and specialties.

## Substitute Teacher Labour Market

In 2005–06, there were 2617 active substitute teachers, representing a teaching effort of 845 FTEs. Both numbers have increased steadily over the last nine years.

The probability of substitute teachers becoming regular teachers is low. For example, of the substitute teachers active in 2000–01, by 2005–06 only 23 percent had obtained probationary/permanent positions and 16.8 percent had obtained term positions. Attrition of substitute teachers is approximately 21 percent each year.

## Integrated View of Teacher Supply and Demand

The effective substitute teacher pool is expected to decline from 3384 in 2006–07 to 3042 in 2014–15. The substitute teacher labour force will likely be sufficient to meet overall demand; however, there may be some difficulties meeting demand in certain geographic areas and in particular subject areas. Specifically, a significant proportion of all substitute teaching assignments were in the Halifax Regional School Board last year. Other regions of the province, and particularly rural and smaller school boards, have reported difficulty in finding substitutes. Further, although this report did not undertake an analysis of substitute teacher endorsement by school level (elementary or secondary), school boards indicate that often a majority of available substitute teachers are endorsed at the elementary level and may be reluctant to accept assignments at the junior and senior high levels.

## **Supply and Demand by Subject and Specialty Area**

Overall, demand by subject and specialty area is projected to be higher between 2006–07 and 2010–11 compared to between 2011–12 and 2014–15. Demand is projected to be highest for elementary grades, administration, and resource. Other subjects in higher demand include English, social studies, mathematics, science, and fine arts.

The supply of newly certified teachers has increased over the past two years but is not evenly distributed across all subject areas. The largest increases in supply have been for teachers with a major in English, social studies, sciences, and business education. There has been a relatively smaller increase in the number of newly certified teachers with a major in biology, while other subject areas, such as fine arts, technology education, physical education, and physics show some decreases.

An analysis of demand and supply by subject area shows surpluses in English and social studies, and smaller surpluses in mathematics, biology, chemistry, physics, and business education. If this trend continues, there should not be a shortage in these subjects, although the market is tight for physics. The market is also tight for physical education, fine arts, and family studies. There will likely be a shortage in technology education.

## **Conclusion**

Nova Scotia has seen significant growth in the number of teachers being certified each year. If the supply of teachers remains unchanged, there will be adequate supply to meet our overall demand. However, there are concerns with respect to a significant oversupply. It is also recognized that the availability of teachers is not spread evenly across the province.

The status of the teacher labour market in Nova Scotia has improved since the 2004 update report in terms of addressing subject area shortages. However, there is a potential shortage in technology education and a tight market in physics, physical education, fine arts, family studies, and French. There is also a possibility that some geographical areas in the province may have difficulties in recruiting teachers in particular subject areas.



# 1. Introduction

In January 2000, the Department of Education published a research paper on teacher demand and supply—*Nova Scotia Public Education Teacher Demand and Supply*. This research was updated in 2001 and most recently in 2004, the results of which were published in the report *Nova Scotia Public Education Teacher Supply and Demand: 2004 Update Report*. These reports examined the public education teacher labour market in Nova Scotia for “regular” teachers (probationary, permanent, and term) and substitute teachers and the projected teacher demand and supply.

The purpose of the 2007 update report is to revise the projections of teacher demand and supply and move the projections out to the 2014–15 school year. The CEDAR database of the Department of Education was used to produce statistics on the number of teachers, their certification, and their activity over the past few years. Data and methodology provided by the Nova Scotia Pension Agency were used to project retirements and disabilities.

The most recent data used for this report is for the 2005–06 school year.

The 2007 update report is organized into 10 sections:

- introduction
- an overview of teacher supply and demand in other jurisdictions, reflecting changes in the teacher labour market outlook, as well as other related background information
- an employment profile of Nova Scotia teachers
- demand projections for teachers in the Nova Scotia public school system
- an outlook on current and future teacher supply
- an analysis of the substitute teacher labour market
- an integrated view of teacher aggregate demand and supply in Nova Scotia, including a view of the linkages and dynamics between the regular and substitute teacher components
- an analysis of projected imbalances in teacher supply and demand by subject, specialty area, and administration
- other labour market considerations
- a summary of the findings of the report



## 2. Teacher Supply and Demand in Other Jurisdictions and Background

The level of supply of teachers has been a concern in a number of jurisdictions. A significant amount of research has been conducted by various education stakeholders to ensure that the overall supply is sufficient to meet the demand for teachers and, more specifically, that there will be sufficient supply in all subject and geographic areas.

In Canada, the general consensus of the research is that there is an adequate, and in some cases ample, supply of teachers overall. However, all provinces reviewed indicated that, although the overall supply was expected to meet demand, there were still potential shortages in certain geographic regions, mainly rural or isolated regions, and in particular subject areas. Difficult-to-fill positions by subject area present a concern for maintaining adequate supply. Subject areas that are contributing to the difficulty of hiring include sciences, mathematics, French-language programming, French second-language, and technology education.

The United States is experiencing similar circumstances with respect to teacher supply. Most states reviewed the present situation only and did not forecast the future supply of and demand for teachers for their respective regions. Shortages were identified in various subject and geographic areas. Contrary to the situation in Canada, many U.S. states are experiencing their teacher shortages in very large, densely populated urban areas. This may be due in part to the higher cost of living in certain large cities such as New York City, which has developed a Housing Incentive program that is designed to combat teacher shortages by offering attractive financial incentives to teachers with background in high-demand subject areas.

The subject shortages in the United States are consistent with the Canadian experience. Of the 50 states and the federal District of Columbia, one state<sup>1</sup> declared that they were not experiencing a teacher shortage in 2005–2006, while 39 others declared shortages in a number of areas.<sup>2</sup> Almost every state that reported shortages declared their shortages in the area of special education, sciences, mathematics, and foreign languages; however, this is not nearly as exhaustive a list as some states reported.<sup>3</sup>

Australia's current state differs somewhat from the Canadian and American experiences in that certain provinces are reporting an overall teacher shortage by grade level, and they are forecasting this to continue in the future with the prospect of higher attrition rates due to retirements. In 2005, New South Wales reported an expected shortage of secondary school teachers, estimating that the supply would equal approximately 80 percent of future demand. Supply by subject and geographic area continued to be of concern, with shortage areas similar to those of Canada and the United States.

A number of jurisdictions have developed comprehensive plans to combat the existing and potential future shortages. Enhancing the image of the teaching profession and working with post-secondary institutions to attract new students to teaching programs are included in the plans of Ontario, Manitoba, Alberta, and New York. Financial incentive programs, such as the New York City Housing Incentive Program, are being offered by Ontario, Alberta, and New York. The Australian provinces of Victoria and New South Wales are developing programs to recruit teachers from interstate and overseas, as well as recruiting trained teachers who have left the field, in attempt to offset the existing and potential shortages.

1 Alaska

2 Eleven states did not provide teacher shortage information, or their information was not available at the time of publication.

3 A number of states reported shortages in a considerable amount of core subject areas.

## **Change to Teacher Pension Plan in Nova Scotia**

In 2005, changes were made to the Nova Scotia Teachers Union Pension Plan that had a significant impact on the number of retirements in 2005. A lump sum payment was made by the province into the pension plan, and a change was made to the indexing rules for pension payments that would apply only to members who retired after January 1, 2006. Teachers who retired before January 1, 2006, had the choice of indexing arrangements.

The impact that the change in pension rules had on retirement levels in 2005 was substantial. With the opportunity to have the choice in pension rules, many teachers who were nearing retirement elected to retire early. In 2005–06, 58.6 percent more teachers retired than forecasted.

The actual retirement figure from the 2005–2006 school year is an anomaly and therefore requires special consideration in this review of teacher supply and demand. The teacher retirement projection model has been adjusted to account for this anomaly.

## **Teacher Education Review**

The labour market supply and demand forecast will inform the review of teacher education programs in Nova Scotia that is currently being undertaken. A three-member review panel has been struck to undertake this review, with a view to ensuring that Nova Scotia teacher education programs continue to meet the changing needs of the education system. The panel will examine the progress made in the implementation of the Post-Shapiro Reports, the implications of the latest supply and demand information, and consider flexible options for the delivery of teacher education, consultative mechanisms, and other related issues. The review panel will use the information from this projection of teacher supply and demand to inform their review and make recommendations with respect to adjustments we need to ensure that our graduates are able to stay and work in Nova Scotia.

## 3. Employment Profile of Nova Scotia Teachers

### 3.1 Teacher Employment Status

The data provided in this update report refer to teachers employed by the school boards who are covered under the Teachers' Provincial Agreement between the Nova Scotia Teachers Union and the Nova Scotia government. The agreement covers teachers with classroom and administrative assignments; many administrators have both. Regardless of the nature of their assignments, teachers are required to be certified by the Department of Education.

During a school year, certified teachers in the Nova Scotia public school system can be actively teaching or be on special leave, such as maternity leave, sick leave, or a leave of absence. An "active" teacher is one who works for at least one day for any school board in the province during the school year.

The following classifications of public education teachers are used in this update:

- Permanent teachers are regular employees of the school boards, and their job security is protected by rights set down in the Teachers' Provincial Agreement and the Education Act.
- Probationary teachers are regular employees of the school boards who are serving a two-year probationary period before becoming permanent teachers.
- Term teachers are hired by the school boards to replace probationary or permanent teachers for a fixed, specific period of time or are to be employed for a fixed period of time.
- Substitute teachers are engaged by the school boards on a day-to-day basis to take the place of regularly employed teachers.

The term "regular" refers to permanent, probationary, and term teachers in the Nova Scotia public school system. The employment status of a teacher may change throughout the school year. A teacher may move from a substitute position to a term position or even a probationary position. For the purposes of this study, teachers are classified according to the highest employment status they held during the year. For example, if a teacher was a substitute teacher for part of the year and then moved to a term position, they are counted as a term teacher, even if they moved back to a substitute teacher at the end of the school year. If a teacher moved from a term position to a probationary position, they are counted as a probationary teacher.

**Table 1: Active Teachers by Status and Year**

| Status                        | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Permanent/probationary</b> | 8916    | 8853    | 8698    | 8419    | 8334    | 8441    | 8364    | 8318    |
| <b>Term</b>                   | 1135    | 1187    | 1189    | 1430    | 1507    | 1403    | 1533    | 1765    |
| <b>Substitute</b>             | 2195    | 2324    | 2233    | 2267    | 2299    | 2454    | 2543    | 2617    |
| <b>Total</b>                  | 12,246  | 12,364  | 12,120  | 12,116  | 12,140  | 12,298  | 12,440  | 12,700  |

With the exception of a small increase in 2003–04, the number of permanent and probationary teachers has been decreasing since 1998–99, but at a slower rate in recent years. The numbers of both term and substitute teachers have increased.

The Halifax Regional School Board continues to employ the largest number of teachers. In most boards, approximately two-thirds of the teachers are in permanent or probationary positions. The Tri-County and Cape Breton–Victoria Regional School Boards have the highest percentages of permanent and probationary positions, while the Conseil scolaire acadien provincial (CSAP) has the lowest. The Cape Breton–Victoria and Strait boards have the lowest percentage of term teachers, while CSAP has the highest percentage of substitute teachers.

**Table 2: Teachers by School Board and Status, 2005–06**

| School Board   | Teacher Status* |              |                 |                 | Total         |
|--|-----------------|--------------|-----------------|-----------------|---------------|
|  | Permanent       | Probationary | Term            | Substitute      |               |
| <b>AVRSB</b><br>Annapolis Valley<br>Regional School Board      | 836 (59.2%)     | 86 (6.1%)    | 175 (12.4%)     | 314 (22.3%)     | <b>1411</b>   |
| <b>CBVRSB</b><br>Cape Breton–Victoria<br>Regional School Board | 1000<br>(59.7%) | 177 (10.6%)  | 109 (6.5%)      | 390 (23.3%)     | <b>1676</b>   |
| <b>CCRSB</b><br>Chignecto–Central<br>Regional School Board     | 1305<br>(62.7%) | 40 (1.9%)    | 325 (15.6%)     | 410 (19.7%)     | <b>2080</b>   |
| <b>CSAP</b><br>Conseil scolaire acadien<br>Provincial          | 260 (52.1%)     | 26 (5.2%)    | 64 (12.8%)      | 149 (29.9%)     | <b>499</b>    |
| <b>HRSB</b><br>Halifax Regional School<br>Board                | 2933<br>(60.5%) | 75 (1.5%)    | 877 (18.1%)     | 962 (19.8%)     | <b>4847</b>   |
| <b>SRSB</b><br>Strait Regional School<br>Board                 | 514 (59.2%)     | 63 (7.3%)    | 55 (6.3%)       | 236 (27.2%)     | <b>868</b>    |
| <b>SSRSB</b><br>South Shore Regional<br>School Board           | 462 (61.5%)     | 20 (2.7%)    | 92 (12.3%)      | 177 (23.6%)     | <b>751</b>    |
| <b>TCRSB</b><br>Tri-County Regional<br>School Board            | 500 (67.9%)     | 21 (2.9%)    | 71 (9.6%)       | 144 (19.6%)     | <b>736</b>    |
| <b>Nova Scotia**</b>   | 7810<br>(61.5%) | 508 (4.0%)   | 1765<br>(13.9%) | 2617<br>(20.6%) | <b>12,700</b> |

\*Excludes teachers on full-year leave

\*\*Number of teachers by board may be greater than the Nova Scotia total, because teachers may work for more than one school board in a year.

### 3.2 Probationary and Term Teachers

Recent trends in the appointment of new probationary teachers and new term teachers are shown below for 2001–02 through 2005–06. New probationary teaching positions may be filled by former term or substitute teachers and by members of the new supply of teachers; new term positions may be filled by former substitute teachers or by members of the new supply of teachers. Also shown are the transitions from term to permanent status and the reappointment of term teachers.

The number of new term and probationary teachers has shown an overall increase since 2001–02. In 2003–04 there was a slight decrease in the number of new term teachers and term teachers who have moved into permanent positions. This corresponded to an increase in the number of new probationary teachers in that year. The number of term teachers who were term teachers in the previous year has remained fairly constant.

**Table 3: Employment of New Probationary and New Term Teachers**

|  | 2001-02        | 2002-03        | 2003-04        | 2004-05        | 2005-06        |
|--|----------------|----------------|----------------|----------------|----------------|
| New probationary teachers*   | 67             | 171            | 362            | 172            | 335            |
| New term teachers**  | 583            | 633            | 485            | 709            | 859            |
| New permanent teachers who were term teachers in the previous year | 124            | 239            | 168            | 297            | 289            |
| Term teachers who were term teachers in the previous year***       | 830<br>(58.0%) | 861<br>(57.1%) | 895<br>(63.8%) | 810<br>(52.8%) | 883<br>(50.0%) |

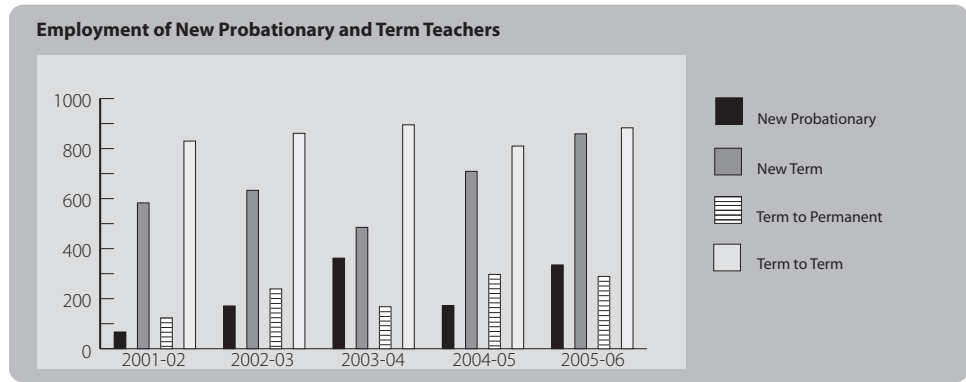
\* Either term or substitute teacher in the previous school year or was not actively teaching in the previous school year

\*\* Either substitute teacher in the previous school year or was not actively teaching in the previous school year

\*\*\* The number in brackets represents the percentage compared to all term teachers

Overall, Nova Scotia school boards are offering mostly term positions to new teachers. Term teachers have a contract of employment for a specific period, and they do not have the protective staff placement rights of their permanent counterparts. Even though many term teachers have their contracts routinely renewed, they remain vulnerable in the event that a school board needs to reduce the number of teachers.

By offering primarily term positions, Nova Scotia school boards may be less competitive when recruiting new teachers from teacher education programs, compared to school boards from other jurisdictions that are offering probationary/permanent positions.



Although the numbers of both probationary and term teachers increased between 2001–02 and 2005–06, the rate at which the number of probationary teachers is increasing is greater (rising from 10 percent to 28 percent of the total new term and probationary teachers over the five years). Also, the number of term teachers moving into permanent positions increased from 124 in 2001–02 to 289 in 2005–06, an increase of 133 percent.



## 4. Teacher Demand

### 4.1 The Demand Model

The demand for teachers refers to the number of new teachers who will be required annually by Nova Scotia school boards. There are several factors that affect the demand for new teachers in the Nova Scotia public school system:

- the annual change in the level of teacher employment as a result of changes in student enrolments and students per teacher ratios
- attrition as a result of teacher retirements, disabilities, death, and occupational mobility

Projected teacher demand is expressed in terms of full-time equivalents (FTEs). When a permanent teacher is on any type of leave, their position is normally back-filled with either a substitute or a term teacher, depending on the duration of the leave or the type of leave. Teachers can either earn pensionable years of service while they are on leave, or they can buy back their leave time as pensionable time. Therefore, for retirement purposes, permanent teachers are counted as working full time, unless they are specifically designated as being part time or job sharing. If they job-share or work part time, they are counted in relation to the portion of the year that they worked.

### 4.2 Trends in Student Enrolments

The number of students enrolled is a fundamental determinant of the number of teachers required. Student enrolments are projected to continue to decrease over the projection period. Enrolment in elementary and junior high is expected to decrease more in the first part of the projection period, while senior high enrolment is expected to decrease more in the second part of the projection period.

In 2006–07, the Department of Education reviewed the limiting age for public schools and decided to bring the limiting age for public school entry in line with most other Canadian provinces. Planned for September 2008, children who have their fifth birthday on or before December 31 will be eligible to enter grade primary. This change will result in approximately 2160 additional students who are projected to start school that fall and move through the education system in subsequent years.

Based on these considerations, there is a 15.8 percent projected decline in enrolment between 2006–07 and 2014–15 (138,661 to 116,725).

The rate of decrease is expected to be lowest for the Halifax Regional School Board and the CSAP, while the highest decrease is expected for Cape Breton–Victoria Regional School Board, Strait Regional School Board, and South Shore Regional School Board.

**Table 4: Actual and Projected Public School Enrolments**

|                     | Actual Enrolments |         | Projected Enrolments |         | Percent Change (Percent Annual Change) |                    |                    |
|---------------------|-------------------|---------|----------------------|---------|--|--------------------|--------------------|
|                     | 2000-01           | 2006-07 | 2010-11              | 2014-15 | 2000-01 to 2006-07                     | 2006-07 to 2010-11 | 2010-11 to 2014-15 |
| <b>Elementary</b>   | 80,418            | 67,305  | 63,258               | 60,859  | -16.3 (-2.9)                           | -6.0 (-1.5)        | -3.8 (-1.0)        |
| <b>Junior High</b>  | 37,130            | 34,077  | 29,899               | 26,509  | -8.2 (-1.4)                            | -12.3 (-3.2)       | -11.3 (-3.0)       |
| <b>Senior High*</b> | 38,325            | 37,279  | 33,270               | 29,357  | -2.7 (-0.5)                            | -10.8 (-2.8)       | -11.8 (-3.1)       |
| <b>Total</b>        | 155,873           | 138,661 | 126,427              | 116,725 | -11.0 (-1.9)                           | -8.8 (-2.3)        | -7.7 (-2.0)        |

|               | Actual Enrolments |         | Projected Enrolments |         | Percent Change (Percent Annual Change) |                    |                    |
|---------------|-------------------|---------|----------------------|---------|--|--------------------|--------------------|
|               | 2000-01           | 2006-07 | 2010-11              | 2014-15 | 2000-01 to 2006-07                     | 2006-07 to 2010-11 | 2010-11 to 2014-15 |
| <b>AVRSB</b>  | 17,767            | 15,936  | 14,366               | 13,229  | -10.3 (-1.8)                           | -9.9 (-2.6)        | -7.9 (-2.0)        |
| <b>CBVRSB</b> | 21,080            | 17,068  | 14,931               | 13,223  | -19.0 (-3.5)                           | -12.5 (-3.3)       | -11.4 (-3.0)       |
| <b>CCRSB</b>  | 26,630            | 23,912  | 21,792               | 20,122  | -10.2 (-1.8)                           | -8.9 (-2.3)        | -7.7 (-2.0)        |
| <b>CSAP</b>   | 4109              | 4124    | 3967                 | 3684    | 0.4 (0.1)                              | -3.8 (-1.0)        | -7.1 (-1.8)        |
| <b>HRSB</b>   | 57,741            | 53,283  | 49,821               | 47,034  | -7.7 (-1.3)                            | -6.5 (-1.7)        | -5.6 (-1.4)        |
| <b>SRSB</b>   | 10,228            | 8245    | 7041                 | 6551    | -19.4 (-3.5)                           | -13.1 (-3.5)       | -8.5 (-2.2)        |
| <b>SSRSB</b>  | 9495              | 8160    | 7310                 | 6518    | -14.1 (-2.5)                           | -10.4 (-2.7)       | -10.8 (-2.8)       |
| <b>TCRSB</b>  | 8823              | 7933    | 7077                 | 6364    | -10.1 (-1.8)                           | -10.8 (-2.8)       | -10.1 (-2.6)       |

\*Includes "other" secondary grades

It should be noted that 2160 new students have been included each of the years as the cohort moves through the system to reflect the proposed primary age change beginning in 2008–09 (and were allocated to the boards based on the percentage of their original projected enrolment compared to the overall original enrolment total).

### 4.3 French Language Instruction

Overall enrolment for French-language program instruction (not including core French) has continued to increase up until the 2004–05 school year before levelling off between 2005–06 and 2006–07. Since 2000–01, French-language program enrolment has increased 8.6 percent, while public school program enrolment overall has decreased 11 percent during the same time period.

Early immersion enrolments have seen a consistent increase over the years, while late immersion enrolments have seen a decrease of almost 500 since 2003–04. This may be due partly to recent increases in the number of schools offering early immersion programs. Integrated French, a program starting in grade 7 and ending in grade 12 whereby students take a French course and a social studies course taught in French in each grade level, has seen a steady decline in enrolment. This decline may be due partly to schools' electing to offer French immersion programming rather than integrated French. Enrolment in CSAP has stayed virtually the same.

**Table 5: Enrolment in French First- and Second-Language Programs**

| Year    | Acadien provincial | Early Immersion | Late Immersion | Integrated French | Total  |
|---------|--------------------|-----------------|----------------|-------------------|--------|
| 2000-01 | 4109               | 5335            | 6128           | 3946              | 19,518 |
| 2001-02 | 4029               | 6107            | 6201           | 3530              | 19,867 |
| 2002-03 | 4059               | 6428            | 6726           | 3462              | 20,675 |
| 2003-04 | 4153               | 6900            | 6853           | 3273              | 21,179 |
| 2004-05 | 4121               | 7413            | 6768           | 3041              | 21,343 |
| 2005-06 | 4153               | 7955            | 6386           | 2644              | 21,138 |
| 2006-07 | 4124               | 8321            | 6304           | 2439              | 21,188 |

## 4.4 Ratio of Students to Teachers

The ratio of the number of students per teacher determines the number of teachers required for a given enrolment size. It is related to class size, but the education system also has teachers who have assignments away from the classroom, such as principals, guidance counsellors, or teachers who provide supports outside of a classroom to students facing various challenges.

The specification of a teacher in the ratio is complex, because the amount of input of a teacher is not fixed. Some teachers work full time and others part time (perhaps on a regular basis as substitutes). When trying to delineate teachers by grade level, there is the additional complication that many teachers are involved in multiple grades, for example, a music teacher who has responsibilities in elementary, junior high, and senior high. The answer to resolving the difficulty in counting teachers, whether they have classroom or administrative duties, or both, is to measure the full-time equivalent (FTE) of teacher effort, which allocates teachers' time according to the amount devoted to each teaching and administrative task in relation to the standard workload of a full-time teacher.

The ratio of the number of students per teacher is based on the number of students enrolled and the number of teacher FTEs at each grade level (i.e., elementary, junior high, and senior high school) and administration. Teacher FTEs at each grade level are based on the teaching effort at these levels. For example, if a teacher works at both an elementary and a junior high school, the FTE for each level is based on the time they worked at each of these levels.

Administration FTEs refer to those positions that receive an administrative allowance, such as superintendents, assistant superintendents, supervisors, consultants who provide support to school boards, principals, vice-principals, and department heads.

Enrolment projections provided in Table 6 include 2160 new students each year to reflect the proposed primary age change beginning in 2008–09.

Between 2001–02 and 2004–05, there were between 765 and 785 administration FTEs, but in 2005–06 there was an increase of 50 (almost half of which were due to the addition of consultants who provide support to schools in math, literacy, and active healthy living) for a total of 826. Further increases are not assumed in this forecast; it is anticipated that the number of FTEs required to play supervisory roles in school boards and schools and to provide classroom and school board curriculum support will remain constant over the projection period.

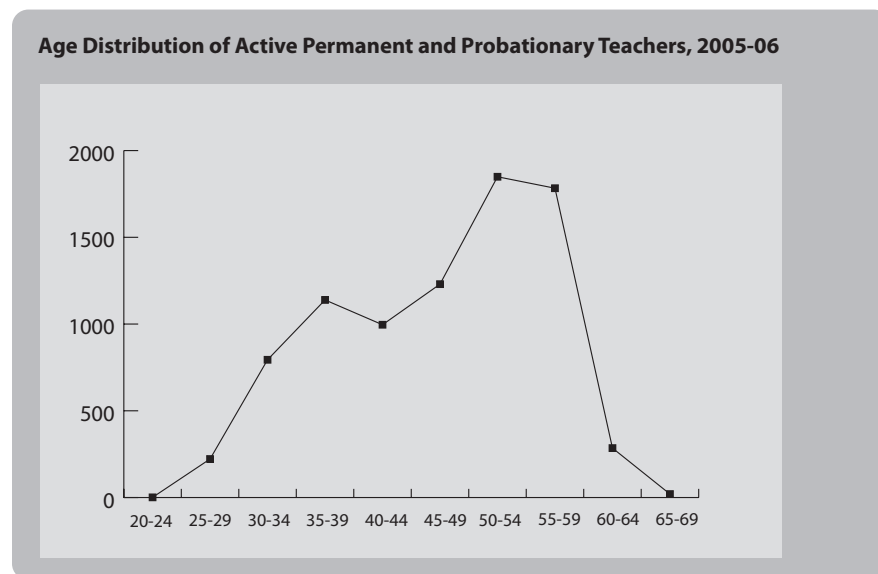
**Table 6: Recent and Projected Students per Teacher/Administrator**

|                          | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | Projected 2014-15 |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| <b>Elementary</b>        |         |         |         |         |         |         |         |         |                   |
| Students                 | 82,993  | 81,930  | 80,418  | 78,626  | 75,965  | 73,606  | 71,394  | 69,375  | 60,859            |
| Teachers FTE             | 4494    | 4453    | 4380    | 4342    | 4271    | 4227    | 4163    | 4198    | 4248              |
| Students per teacher FTE | 18.5    | 18.4    | 18.4    | 18.1    | 17.8    | 17.4    | 17.1    | 16.5    | 14.3              |
| <b>Junior High</b>       |         |         |         |         |         |         |         |         |                   |
| Students                 | 38,246  | 37,810  | 37,130  | 36,738  | 36,895  | 37,045  | 36,537  | 35,305  | 26,509            |
| Teachers FTE             | 2207    | 2195    | 2124    | 2111    | 2131    | 2151    | 2146    | 2181    | 1788              |
| Students per teacher FTE | 17.3    | 17.2    | 17.5    | 17.4    | 17.3    | 17.2    | 17.0    | 16.2    | 14.8              |
| <b>Senior High</b>       |         |         |         |         |         |         |         |         |                   |
| Students                 | 38,772  | 38,465  | 38,325  | 38,086  | 37,739  | 37,863  | 37,465  | 37,625  | 29,357            |
| Teachers FTE             | 2000    | 2000    | 1940    | 1951    | 1939    | 1948    | 1965    | 1991    | 1605              |
| Students per teacher FTE | 19.4    | 19.3    | 19.8    | 19.5    | 19.5    | 19.4    | 19.1    | 18.9    | 18.3              |
| <b>Administration</b>    |         |         |         |         |         |         |         |         |                   |
| Students                 | 160,011 | 158,205 | 155,873 | 153,450 | 150,599 | 148,514 | 145,396 | 142,304 | 116,725           |
| Admin FTE                | 749     | 810     | 761     | 764     | 766     | 780     | 776     | 826     | 826               |
| Students per admin FTE   | 213.6   | 195.3   | 204.8   | 200.9   | 196.9   | 190.4   | 187.4   | 172.3   | 141.3             |

## 4.5 Teacher Retirements and Disabilities

Attrition due to retirements makes up the largest component of the demand for new teachers.

In 2005–06, the average age of active permanent and probationary teachers in Nova Scotia was 47 years. Almost half (47 percent) of these teachers were 50 years of age or older.

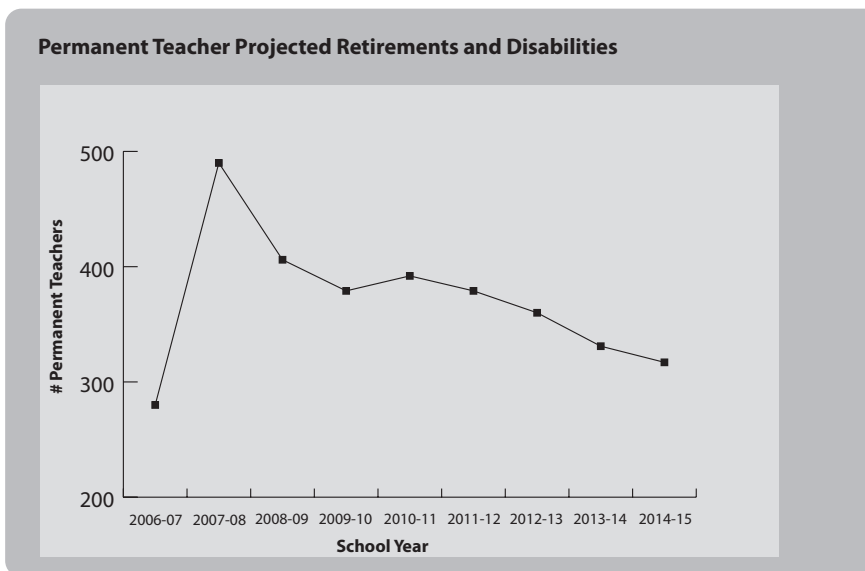


The Nova Scotia Pension Agency undertook an analysis of its retirement and disability data to develop assumptions on when teachers are expected to retire or go on disability pension, based on past behaviour. From this analysis, it is assumed that approximately 46 percent of teachers will retire or go on disability pension when they first become eligible for an unreduced pension; approximately 20 percent of teachers will retire or become disabled prior to becoming eligible for an unreduced pension; and the remainder will leave within a few years of becoming eligible. Appendix 3 contains a table with detailed assumptions.

Based on these assumptions for retirements and disabilities, during the projection period the number of teachers leaving will peak in 2007–08 and then, with the exception of 2010–11, will start to slowly decrease through 2014–15. It should be noted that although the peak in the number of retirements is anticipated in 2007–08, retirement levels are expected to be lower in each year of the projection period than they have been over the last several years.

The following limitations need to be considered when reviewing the data:

- the assumptions are based on a limited history of data, i.e., five years of data
- the projections are less accurate the farther they are into the future



## 4.6 Other Attrition of the Teacher Workforce

Other than retirements and disabilities, a teacher may leave employment in Nova Scotia public education due to death or occupational mobility (i.e., moving to work in other sectors or jurisdictions or leaving the labour force).

There are a number of reasons that regular teachers migrate from employment in Nova Scotia public education. These include job dissatisfaction, better opportunities in another sector or jurisdiction, accompanying a spouse moving to another region, and withdrawal from the workforce. For term teachers there is also the factor of not having their contracts renewed and being unwilling or unable to substitute teach.

The number of teachers who have died each year since 2001–02 ranges from four to eight teachers. Based on this analysis, it is assumed that about five teachers will die each year.

There is a decreasing trend in occupational mobility of regular teachers. Over the last five years, there has been a substantial decrease in the occupational mobility of permanent and probationary teachers. Although there have been some slight fluctuations, the mobility of term teachers has remained relatively consistent.

On average, about 23 permanent/probationary and 79 term teachers do not return to the Nova Scotia public school system each year due to reasons other than retirements, deaths, or disabilities. On average, teachers who leave due to occupational mobility represent about 72 percent of an FTE; therefore, each year the Nova Scotia public school system loses 74 teacher FTEs to occupational mobility.

**Table 7: Regular Teacher Occupational Mobility from Nova Scotia Public Education**

|                               | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | Average | FTEs* |
|-------------------------------|---------|---------|---------|---------|---------|---------|-------|
| <b>Permanent/probationary</b> | 48      | 24      | 15      | 18      | 10      | 23      | 17    |
| <b>Term</b>                   | 80      | 87      | 87      | 67      | 76      | 79      | 57    |
| <b>Total</b>                  | 128     | 111     | 102     | 85      | 86      | 102     | 74    |

Includes teachers that were not in the public school system but were active the previous school year.

Calculations may not add perfectly due to rounding.

\*Based on an average of 72 percent FTE

## 4.7 Temporary Attrition

Teachers can be off work for whole or part of a school year due to special leaves. If the number of teachers on leave remains constant from year to year, the impact on the aggregated demand for new teachers is neutral. Over time, the number of teachers on leave has been increasing slightly (with the exception of a drop in 2002–03). Indications are that the number of teachers going on leave will remain constant in the future, unless there are new initiatives for leaves. Therefore, it is assumed that the number of teachers going on leave is offset by the number of teachers returning from leave; the overall impact on new demand is neutral.

**Table 8: Leaves by Type—Permanent and Probationary Teachers**

| Type of Leave                 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 |
|-------------------------------|---------|---------|---------|---------|---------|
| <b>Deferred salary</b>        | 200     | 183     | 159     | 111     | 167     |
| <b>Educational/Sabbatical</b> | 43      | 33      | 32      | 34      | 49      |
| <b>Leave of absence</b>       | 498     | 463     | 512     | 542     | 499     |
| <b>Maternity leave</b>        | 147     | 148     | 177     | 195     | 220     |
| <b>Sick leave</b>             | 270     | 245     | 254     | 278     | 275     |
| <b>Total</b>                  | 1158    | 1072    | 1134    | 1160    | 1210    |

## 4.8 Long-Term Demand Outlook

Over the projection period, the average annual demand for teachers is approximately 369 teachers per year. On average, there are 370 retirements and new disabilities each year, 79 teachers leave due to deaths and occupational mobility, and there is an average annual adjustment of 81 teachers each year due to declining enrolments.

Overall, new teacher demand is expected to increase over the projection period, from 233 in 2006–07 to 363 in 2014–15. Demand is expected to be relatively consistent from year to year in the latter half of the projection period, from about 2010 to 2014.

**Table 9: Projected Teacher FTE Demand by Component for Nova Scotia**

|                                     | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Change in Teacher FTEs</b>       |         |         |         |         |         |         |         |         |         |
| Elementary                          | -60     | -58     | 86      | -14     | -7      | -3      | 10      | 45      | 53      |
| Junior High                         | -55     | -53     | -37     | -52     | -45     | -42     | -25     | -43     | -41     |
| Senior High                         | -11     | -19     | -64     | -47     | -57     | -42     | -52     | -48     | -45     |
| Administrators                      | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Total*                              | -126    | -130    | -15     | -133    | -109    | -87     | -67     | -46     | -33     |
| <b>Retirements and disabilities</b> |         |         |         |         |         |         |         |         |         |
|                                     | 280     | 490     | 406     | 379     | 392     | 379     | 360     | 331     | 317     |
| <b>Other attrition</b>              |         |         |         |         |         |         |         |         |         |
| Deaths                              | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5       | 5       |
| Occupational mobility               | 74      | 74      | 74      | 74      | 74      | 74      | 74      | 74      | 74      |
| Total                               | 79      | 79      | 79      | 79      | 79      | 79      | 79      | 79      | 79      |
| <b>Total teacher demand</b>         |         |         |         |         |         |         |         |         |         |
|                                     | 233     | 439     | 470     | 345     | 362     | 371     | 372     | 364     | 363     |

\* Administrator FTEs held constant at 826 per year—0 change.

\*\* Note that numbers may not add due to rounding of FTEs.





## 5. Teacher Supply

### 5.1 Overview of New Teacher Supply

New supply refers to the number of new entrants into the Nova Scotia public school system. The number of Nova Scotia teacher certificates issued to teachers with a Nova Scotia residence is used as a proxy for new entrants. It is assumed that newly certified teachers with a Nova Scotia postal code are interested in obtaining a full-time teaching position in Nova Scotia.

Although sources of teachers in Nova Scotia can be identified from the available data, it is not possible to allocate new supply to a region, or school board, within the province. Each school board will have differing advantages and challenges in attracting teachers.

### 5.2 Nova Scotia Teacher Certificates

The number of teachers receiving Nova Scotia teacher certificates has increased steadily since 2004, with a substantial increase in 2005 and 2006. The average number of teacher certificates issued each year includes 374 graduates from teacher education programs in the province and 500 teachers trained in other jurisdictions. The teacher certificates issued to those trained outside Nova Scotia have been issued predominantly to graduates from the University of New Brunswick, Memorial University in Newfoundland and Labrador, as well as institutions in Ontario and Maine.

**Table 10: Nova Scotia Teacher Certificates Issued by Location of Education Institution**

| Nova Scotia Teacher Certificate Recipients Issued by Program Location |                        | 2002       | 2003       | 2004       | 2005        | 2006        | 5-year average |
|---|------------------------|------------|------------|------------|-------------|-------------|----------------|
| <b>Nova Scotia institutions</b>                                       | Acadia                 | 127        | 121        | 123        | 120         | 128         |                |
|   | Dalhousie              | 2          | –          | 1          | 2           | –           |                |
|   | MSVU                   | 127        | 135        | 135        | 129         | 120         |                |
|   | St. F.X.               | 116        | 106        | 91         | 101         | 98          |                |
|   | Université Sainte-Anne | 21         | 12         | 17         | 14          | 24          |                |
| <b>NOVA SCOTIA INSTITUTIONS TOTAL</b>                                 |                        | <b>393</b> | <b>374</b> | <b>367</b> | <b>366</b>  | <b>370</b>  | <b>374</b>     |
| <b>Other Atlantic provinces</b>                                       | NB (Atlantic Baptist)  | 4          | 2          | 6          | 14          | 13          |                |
|   | NB (NB Dept. Educ.)    | 1          | 2          | –          | –           | –           |                |
|   | NB (St. Thomas)        | 17         | 14         | 11         | 8           | 16          |                |
|   | NB (U de M)            | 3          | 12         | 4          | 9           | 9           |                |
|   | NB (UNB St. John)      | –          | 1          | –          | 1           | –           |                |
|   | NB (UNB Fredericton)   | 43         | 70         | 53         | 76          | 70          |                |
|   | NB (Teachers College)  | 1          | –          | –          | –           | 1           |                |
|   | NB total               | 68         | 102        | 74         | 108         | 109         |                |
|   | NL Total (Memorial)    | 31         | 35         | 41         | 112         | 88          |                |
|   | PEI total (UPEI)       | 15         | 20         | 12         | 22          | 27          |                |
| <b>Other Atlantic provinces total</b>                                 |                        | <b>114</b> | <b>157</b> | <b>127</b> | <b>242</b>  | <b>224</b>  | <b>173</b>     |
| <b>Other Canadian provinces</b>                                       | AB                     | 15         | 20         | 14         | 31          | 19          |                |
|   | BC                     | 19         | 10         | 15         | 16          | 15          |                |
|   | MB                     | 6          | 5          | 5          | 3           | 8           |                |
|   | ON                     | 58         | 60         | 86         | 83          | 72          |                |
|   | QC                     | 20         | 16         | 13         | 23          | 20          |                |
|   | SK                     | 8          | 5          | 2          | 3           | 1           |                |
| <b>Other Canadian provinces total</b>                                 |                        | <b>126</b> | <b>116</b> | <b>135</b> | <b>159</b>  | <b>135</b>  | <b>134</b>     |
| <b>United States and other countries</b>                              | Maine                  | 130        | 86         | 115        | 192         | 230         |                |
|   | Other United States    | 8          | 9          | 24         | 15          | 24          |                |
|   | Other countries        | 14         | 13         | 26         | 35          | 46          |                |
| <b>United States and other countries total</b>                        |                        | <b>152</b> | <b>108</b> | <b>165</b> | <b>242</b>  | <b>300</b>  | <b>193</b>     |
| <b>Institutions outside Nova Scotia total</b>                         |                        | <b>392</b> | <b>381</b> | <b>427</b> | <b>643</b>  | <b>659</b>  | <b>500</b>     |
| <b>Total number of new certifications</b>                             |                        | <b>785</b> | <b>755</b> | <b>794</b> | <b>1009</b> | <b>1029</b> | <b>874</b>     |

### 5.3 Teacher Education Program Capacity, Graduates, and Applications

The number of graduates from teacher education programs in Nova Scotia has been fairly constant over the last number of years, while the number of applications for education programs is very strong. Université Sainte-Anne received approval and began offering a combined BA/BEd program in 2002–03 and in 2007 graduated the first cohort of students from its Halifax campus. The number of graduates from Université Sainte-Anne has increased since 2005, and approximately 50 graduates are anticipated from its BEd program in both 2008 and 2009.

**Table 11a: BEd Applications Received for Class of 2007, 2008, and 2009 by Program Level**

| Nova Scotia Institution          | Program Level | 2007        | 2008        | 2009        |
|----------------------------------|---------------|-------------|-------------|-------------|
| Acadia                           | Elementary    | 202         | 213         | 197         |
|                                  | Secondary     | 213         | 216         | 183         |
|                                  | Total         | 415         | 429         | 380         |
| St. F.X.                         | Elementary    | 179         | 168         | 161         |
|                                  | Secondary     | 254         | 241         | 229         |
|                                  | Total         | 433         | 409         | 390         |
| MSVU                             | Elementary    | 192         | 187         | 200         |
|                                  | Secondary     | 220         | 194         | 175         |
|                                  | Total         | 412         | 381         | 375         |
| <b>English instruction total</b> |               | <b>1260</b> | <b>1219</b> | <b>1145</b> |

**Table 11b: Teacher Education Institutions in Nova Scotia—Capacity, Graduates, and Applicants**

|   | Capacity   | Graduates  |            |            | Applicants**              |             |             |
|---|------------|------------|------------|------------|---------------------------|-------------|-------------|
|   |            | 2005       | 2006       | 2007       | 2007                      | 2008        | 2009        |
| Acadia  | 115        | 120        | 128        | 119        | 415                       | 429         | 380         |
| St. F.X.  | 99*        | 101        | 98         | 93         | 433                       | 409         | 390         |
| MSVU  | 115        | 129        | 120        | 118        | 412                       | 381         | 375         |
| <b>English instruction total</b>                          | <b>329</b> | <b>350</b> | <b>346</b> | <b>330</b> | <b>1260</b>               | <b>1219</b> | <b>1145</b> |
| Université Sainte-Anne<br><b>French instruction total</b> | <b>80</b>  | <b>11</b>  | <b>18</b>  | <b>41</b>  | Information not available |             |             |

\*The number of funded BEd seats at St. Francis Xavier was 90 per year until 2006–07, when the department provided funding to support 9 additional seats for a total of 99 per year.

\*\*The number of applicants for the class of 2007, 2008, 2009 as shown in Table 11a.

## 5.4 Long-Term Teacher Supply Outlook

Over the past five years, on average, 374 teacher certificates were issued per year to graduates of Nova Scotia institutions. Of these, on average, 41 have home addresses outside Nova Scotia, and it is assumed that they are not interested in obtaining a teaching position in the Nova Scotia public education system. About 500 certificates are issued each year to graduates from non–Nova Scotia institutions. Based on these five-year figures, the average supply of new teachers would be 833 per year.

However, this average does not adequately reflect the significant increase of newly certified teachers over the last two years (up from a total of 794 in 2004 to 1009 and 1029 in 2005 and 2006, respectively). In addition, the applications received for admittance into BEd programs in Nova Scotia institutions for the class of 2007 and the next couple of years is well over 1000. The combination of higher numbers of newly certified teachers over the last two years of data along with the strong number of applications for the next several graduating classes indicate that average annual teacher supply will be significantly more than 833.

Each year, a small number of teachers return to the Nova Scotia public education system who did not teach in Nova Scotia the previous school year. For the purposes of this report, the number of new and returning supply of teachers will be held constant at 1000 per year, which includes anticipated increases in numbers of new graduates and the small number of teachers returning into the system each year.

Assuming this supply will continue in future years, there will not be an aggregate shortage of teachers in Nova Scotia. However, as the following sections will note, the reality is very different for rural and other geographic areas across the province, both in numbers and in specific subjects and specialties.

## 6. Substitute Teacher Labour Market

### 6.1 Substitute Teacher Activity

Substitute teachers provide a valuable resource to Nova Scotia public schools. They fill in for permanent, probationary, and term teachers who are temporarily absent from work. Often permanent teachers enter the profession as substitute teachers.

Table 12 summarizes information on the substitute labour market from 1997–98 through 2005–06. The information includes

- the number of teachers teaching only as substitutes in the Nova Scotia public education system during the year, as a measure of the size of the substitute teacher workforce
- the average and median number of days of teaching of the substitute teacher workforce
- the profile of substitute teachers' previous-year teaching activity in Nova Scotia public education to indicate the source of substitute teacher workforce
- the profile of substitute teachers' next-year teaching activity to indicate the ability of substitute teachers to obtain regular teaching assignments and to highlight attrition of substitute teachers from the public education system in Nova Scotia

### 6.2 Size and Importance of Teacher Workforce

The number of substitute teachers has increased over the last nine years, while the average number of days taught has stayed relatively constant. Therefore, the number of substitute teacher FTEs has increased. The number of substitute teachers (full-time equivalents) is equal to about 9 percent of the regular teaching workforce, i.e., permanent, probationary, and term teachers. This percentage has been steadily increasing since 1997–98 (6.3 percent to 9.2 percent).

On average, substitute teachers worked 63 days during the 2005–06 school year. Each year, a small number of substitute teachers find permanent teaching positions. More find term positions; while the largest number return as substitute teachers the following year. A small number of permanent teachers also return as substitute teachers in the following year.

Each year, about one-fifth (21 percent) of the substitute teachers from the previous year do not substitute or teach in the Nova Scotia public school system in any capacity.

**Table 12: Nova Scotia Substitute Teacher Labour Market**

|   | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Substitute teachers                           | 2176    | 2195    | 2324    | 2233    | 2267    | 2299    | 2454    | 2543    | 2617    |
| Average number of days taught                 | 53      | 61      | 62      | 65      | 65      | 61      | 62      | 61      | 63      |
| Median number of days taught                  | 40      | 46      | 53      | 53      | 51      | 48      | 50      | 49      | 52      |
| <b>Previous year teaching activity</b>        |         |         |         |         |         |         |         |         |         |
| Permanent/probationary                        | 51      | 95      | 13      | 30      | 65      | 153     | 132     | 132     | 191     |
| Term  | 106     | 72      | 159     | 128     | 98      | 119     | 130     | 84      | 76      |
| Substitute                                    | 1280    | 1163    | 1380    | 1408    | 1270    | 1266    | 1392    | 1462    | 1401    |
| Did not teach in Nova Scotia public education | 739     | 865     | 772     | 667     | 834     | 761     | 800     | 865     | 949     |
| <b>New year teaching activity</b>             |         |         |         |         |         |         |         |         |         |
| Permanent/probationary                        | 97      | 21      | 5       | 12      | 40      | 104     | 20      | 114     | –       |
| Term  | 383     | 291     | 274     | 415     | 439     | 328     | 496     | 564     | –       |
| Substitute                                    | 1163    | 1380    | 1408    | 1270    | 1266    | 1392    | 1462    | 1401    | –       |
| Did not teach in Nova Scotia public education | 533     | 503     | 637     | 536     | 522     | 475     | 476     | 464     | –       |
| Substitute teacher attrition rate             | 24%     | 23%     | 27%     | 24%     | 23%     | 21%     | 19%     | 18%     | –       |

**Table 13: Substitute FTEs Compared to Regular Teacher FTEs**

|  | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Substitute teacher FTEs</b>                                 | 591     | 687     | 739     | 744     | 756     | 719     | 780     | 796     | 845     |
| <b>Substitute FTEs as a percentage of regular teacher FTEs</b> | 6.3%    | 7.1%    | 7.7%    | 7.9%    | 8.1%    | 7.8%    | 8.6%    | 8.8%    | 9.2%    |

Although the overall number of substitute teachers has increased over the last nine years, as seen in Table 12, the increase may not be allocated evenly across the province. In particular, rural and smaller school boards have indicated that the substitute pool available in their region is insufficient to meet demand. As indicated in Table 14, the Halifax Regional School Board (HRSB) employed the highest percentage (35 percent) of all substitute teachers in each board in 2005–06. In contrast, the Tri-County, South Shore, CSAP, and Strait Regional School Boards each employed between 5 and 8 percent, while the Annapolis Valley, Cape Breton–Victoria, and Chignecto-Central Regional School boards each employed between 11 and 15 percent of all substitute teachers in each board.

The combination of the large number of substitutes employed in the HRSB along with the probability that many substitutes live in (or in close proximity to) the Halifax Regional Municipality and choose to work in the HRSB leaves only so much of the substitute pool left from which the other seven boards can draw. In addition, with the small pool of substitutes left for boards to choose from, there may be insufficient supply to meet demand in particular subjects or specialty levels.

**Table 14: Substitute Teachers Employed in 2005–06**

| School Board       | Substitutes Employed in Each Board* | Percentage    |
|--------------------|-------------------------------------|---------------|
| AVRSB              | 314                                 | (11.3%)       |
| CBVRSB             | 390                                 | (14.0%)       |
| CCRSB              | 410                                 | (14.7%)       |
| CSAP               | 149                                 | (5.4%)        |
| HRSB               | 962                                 | (34.6%)       |
| SRSB               | 236                                 | (8.5%)        |
| SSRSB              | 177                                 | (6.4%)        |
| TCRSB              | 144                                 | (5.2%)        |
| <b>Nova Scotia</b> | <b>2782</b>                         | <b>(100%)</b> |

\* Substitute teachers may work for more than one school board in a year. Totals are from Table 2.

A further challenge faced by school boards is that substitute teachers who are endorsed to teach at the elementary level may be reluctant to accept assignments at the junior and senior high level. This poses significant difficulty for school boards in cases where the substitute pool for the region includes a significant proportion of teachers endorsed at the elementary level.

### 6.3 Source of Substitute Teachers

The source of substitute teachers is assessed by their attachment to Nova Scotia public education in the previous year. Of the 2617 substitute teachers in 2005–06, during the previous year

- 1401 (53.5 percent) were substitute teachers
- 76 (2.9 percent) were term teachers
- 191 (7.3 percent) were permanent or probationary teachers
- 949 (36.3 percent) did not teach in public education

### 6.4 Retention of Substitute Teachers

Although many substitute teachers are interested in obtaining permanent positions, only 23 percent of substitute teachers who were teaching in 2000–01 have obtained a permanent teaching position five years later. Only 16.8 percent have obtained a term position.

Approximately one-fifth (21 percent) of the substitute teachers who were substituting in 2000–01 were substituting in 2005–06. Almost 40 percent of the substitute teachers from 2000–01 were not active in the Nova Scotia public school system five years later.

This data shows that some teachers will continue to substitute; however, a large number leave the Nova Scotia public school education system.

**Table 15: Five-Year Work History of Substitute Teachers in 2000–2001**

| <b>“Future” Regular Teacher Status of the 2233 Substitute Teachers Active in 2000-01</b> | <b>2001-02<br/>1 year later</b> | <b>2002-03<br/>2 years later</b> | <b>2003-04<br/>3 years later</b> | <b>2004-05<br/>4 years later</b> | <b>2005-06<br/>5 years later</b> |
|--|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <b>Permanent/<br/>probationary</b>   | 12<br>(0.5%)                    | 77<br>(3.4%)                     | 244<br>(10.9%)                   | 367<br>(16.4%)                   | 523<br>(23.4%)                   |
| <b>Term</b>  | 415<br>(18.6%)                  | 526<br>(23.6%)                   | 444<br>(19.9%)                   | 426<br>(19.1%)                   | 375<br>(16.8%)                   |
| <b>Substitute</b>  | 1270<br>(56.9%)                 | 933<br>(41.8%)                   | 769<br>(34.4%)                   | 601<br>(26.9%)                   | 468<br>(21.0%)                   |
| <b>Not active</b>  | 536<br>(24.0%)                  | 697<br>(31.2%)                   | 776<br>(34.8%)                   | 839<br>(37.6%)                   | 867<br>(38.8%)                   |



## 7. Integrated View of Regular Teacher Supply and Demand

Throughout the projection period, new supply is estimated to be significantly higher than annual demand. Demand is projected to reach highs in 2007–08 and 2008–09, but still at a lower level than in recent years.

**Table 16: New Supply Versus Annual Demand, 2006–07 through 2014–15**

|  | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Supply (newly certified teachers)</b> | 1000    | 1000    | 1000    | 1000    | 1000    | 1000    | 1000    | 1000    | 1000    |
| <b>Demand</b>                            | 233     | 439     | 470     | 345     | 362     | 371     | 372     | 364     | 363     |
| <b>Difference</b>                        | 767     | 561     | 530     | 655     | 638     | 629     | 628     | 636     | 637     |

Table 17 shows an integrated view of the dynamics of teacher supply and demand. The table synthesizes information elsewhere in this update into a model of the overall teacher workforce in Nova Scotia and combines new supply, returning supply, and the demand for regular and substitute teachers. The model depicts how

- the supply of new teachers feeds the need for both regular and substitute teachers
- the number of teachers available to fill regular teacher positions is the sum of the new supply of teachers, the existing substitute pool, and teachers returning to the public education system
- the size of the substitute teacher pool is increased by new supply and decreased by the demand for regular teachers
- the substitute pool is diminished by the attrition of substitute teachers, i.e., substitute teachers not returning to teach in the public school system in any manner the following school year

**Table 17: Projected Nova Scotia Permanent and Substitute Teacher Workforce (FTE) Dynamics**

|   | 2006-07     | 2007-08     | 2008-09     | 2009-10     | 2010-11     | 2011-12     | 2012-13     | 2013-14     | 2014-15     |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Regular teacher demand components</b>  |             |             |             |             |             |             |             |             |             |
| Retirements and disabilities  | 280         | 490         | 406         | 379         | 392         | 379         | 360         | 331         | 317         |
| Other attrition   | 79          | 79          | 79          | 79          | 79          | 79          | 79          | 79          | 79          |
| Change in number employed   | -126        | -130        | -15         | -113        | -109        | -87         | -67         | -46         | -33         |
| <b>Total</b>  | <b>233</b>  | <b>439</b>  | <b>470</b>  | <b>345</b>  | <b>362</b>  | <b>371</b>  | <b>372</b>  | <b>364</b>  | <b>363</b>  |
| <b>Teachers available to meet demand for regular teachers</b>                   |             |             |             |             |             |             |             |             |             |
| Beginning substitute pool   | 2617        | 2673        | 2555        | 2437        | 2443        | 2434        | 2420        | 2408        | 2405        |
| New teacher supply  | 1000        | 1000        | 1000        | 1000        | 1000        | 1000        | 1000        | 1000        | 1000        |
| <b>Total teachers available</b>   | <b>3617</b> | <b>3673</b> | <b>3555</b> | <b>3437</b> | <b>3443</b> | <b>3434</b> | <b>3420</b> | <b>3408</b> | <b>3405</b> |
| Meet teacher demand   | (233)       | (439)       | (470)       | (345)       | (362)       | (371)       | (372)       | (364)       | (363)       |
| <b>Effective substitute pool</b>  | <b>3384</b> | <b>3234</b> | <b>3085</b> | <b>3092</b> | <b>3081</b> | <b>3063</b> | <b>3048</b> | <b>3044</b> | <b>3042</b> |
| Attrition of substitutes  | 711         | 679         | 648         | 649         | 647         | 643         | 640         | 639         | 639         |
| Attrition rate %  | 21%         | 21%         | 21%         | 21%         | 21%         | 21%         | 21%         | 21%         | 21%         |
| <b>Next-year substitute pool</b>  | <b>2673</b> | <b>2555</b> | <b>2437</b> | <b>2443</b> | <b>2434</b> | <b>2420</b> | <b>2408</b> | <b>2405</b> | <b>2403</b> |
| <b>Substitute Teacher Metrics</b>   |             |             |             |             |             |             |             |             |             |
| Estimated substitute requirement at 10% of regular teacher workforce            | 907         | 894         | 893         | 881         | 870         | 861         | 855         | 850         | 850         |
| Effective substitute teacher capacity utilization                               | 26.8%       | 27.6%       | 28.9%       | 28.5%       | 28.2%       | 28.1%       | 28.1%       | 27.9%       | 27.9%       |
| "Teacher available" probability for a regular teaching position in current year | 6.4%        | 12.0%       | 13.2%       | 10.0%       | 10.5%       | 10.8%       | 10.9%       | 10.7%       | 10.7%       |

\*Numbers may not add up to totals due to rounding.

The integrated dynamics model assumes that the labour market components for regular teachers are operating effectively, meaning that

- Nova Scotia school boards are successful in recruiting teachers to meet their demand
- all projected supply will be available to teach, in either regular or substitute positions
- teachers are aware of the opportunities for them to work in the Nova Scotia public education system, and they are willing to move where jobs are offered
- many new teachers start their careers as substitute teachers with the intention of becoming permanent teachers
- the attrition of substitute teachers is 21 percent per year—based on an analysis of previous years' data

Based on this analysis, the effective substitute teacher pool will decrease from its current level through to the 2014–15 school year, but it is anticipated that there will still be a large enough aggregate substitute pool to meet the demand in peak periods, assuming a 10 percent absenteeism rate for permanent teachers. However, it may be difficult to acquire sufficient substitute teachers to meet the demand in certain geographical regions and for certain subjects or specialty areas. Most substitute teachers are in the Halifax Regional School Board, and other boards in the province continue to struggle to attract substitute teachers. Some school boards also face challenges with respect to an insufficient supply of substitutes who can teach at the junior and senior high school levels.



## 8. Demand and Supply by Subject, Specialty, and Administration

This section compares annual estimates of supply by category with corresponding projections of demand to obtain indications of the subjects and specialty areas where the outlook is for significant labour market imbalances. Both the measures of supply and projections of demand are approximations of the future; therefore, the comparisons are not appropriate for fine tuning. Nevertheless, there are subjects and specialties where the prospect for major imbalances are clear.

The consequences of oversupply will be the misdirection of teacher education program resources in Nova Scotia institutions, and that prospective teachers will be educated for an occupation in which there is a reduced opportunity to work in the province. There is at least a chance that Nova Scotia-educated teachers who are not employed in Nova Scotia will find suitable teaching work elsewhere. The consequence of shortages, however, is more critical for public education in Nova Scotia, because school boards will have difficulty hiring teachers who are fully prepared to teach the Public School Program in their respective subjects. In specialized areas such as Support Services, a shortage of teachers means that the individualized needs of students may not be attended to in the best manner.

### 8.1 Projected Teacher Demand by Subject Area

Projected demand by subject, specialty area, and administration combines the

- replacement demand for teachers who are estimated to retire (or become disabled) by year according to the amount of time the teacher devotes to the subject, specialty area, or administrative duties in the 2005–06 school year
- net changes in teaching employment and other attrition components that are distributed according to the number of FTEs providing services in these areas in the 2005–06 school year

The following should be considered when interpreting these data

- the uncertainty around when teachers retire will be greater the smaller the number of teachers in a subject or specialty area
- subject areas taught are based on one year of data—experienced teachers may change the subjects they teach in future years
- changes in emphasis on curriculum or specialty areas may impact the future supply and demand by subject and specialty area

**Table 18: Projected Demand for Teachers in Nova Scotia by Subject/Specialty/Administration**

|                                       | 2006-07 through 2010-11      |               |       | 2011-12 through 2014-15      |               |       |
|---------------------------------------|------------------------------|---------------|-------|------------------------------|---------------|-------|
|                                       | Retirements and Disabilities | Other Factors | Total | Retirements and Disabilities | Other Factors | Total |
| <b>Secondary*</b>                     | 650                          | -210          | 440   | 490                          | -156          | 335   |
| English                               | 103                          | -29           | 74    | 78                           | -22           | 56    |
| French**                              | 43                           | -21           | 22    | 44                           | -15           | 29    |
| Other languages                       | 0                            | 0             | 0     | 1                            | 0             | 1     |
| Social studies                        | 85                           | -24           | 60    | 58                           | -18           | 40    |
| Mathematics                           | 101                          | -33           | 68    | 68                           | -24           | 44    |
| Science                               | 73                           | -28           | 45    | 48                           | -21           | 27    |
| Biology                               | 19                           | -5            | 14    | 11                           | -3            | 8     |
| Chemistry                             | 7                            | -3            | 4     | 6                            | -2            | 3     |
| Physics                               | 9                            | -2            | 7     | 5                            | -2            | 3     |
| General and other sciences            | 38                           | -18           | 20    | 26                           | -13           | 13    |
| Physical education**                  | 55                           | -18           | 37    | 39                           | -13           | 26    |
| Fine arts**                           | 74                           | -24           | 50    | 63                           | -18           | 45    |
| Technology education                  | 32                           | -11           | 21    | 25                           | -8            | 17    |
| Business education/ entrepreneurship  | 18                           | -3            | 15    | 7                            | -2            | 5     |
| Personal development/career education | 35                           | -12           | 22    | 30                           | -9            | 20    |
| Family studies                        | 18                           | -5            | 12    | 15                           | -4            | 11    |
| Multiple subjects                     | 12                           | 0             | 12    | 11                           | 0             | 11    |
| Vocational                            | 0                            | -1            | -1    | 3                            | -1            | 3     |
| <b>Elementary</b>                     | 725                          | 92            | 817   | 517                          | 201           | 718   |
| <b>Specialties</b>                    |                              |               |       |                              |               |       |
| Education support                     | 24                           | -2            | 22    | 15                           | 0             | 15    |
| Guidance                              | 37                           | -5            | 32    | 22                           | -3            | 19    |
| Resource                              | 161                          | -9            | 153   | 128                          | 12            | 140   |
| <b>Administration</b>                 | 349                          | 36            | 385   | 216                          | 29            | 244   |
| <b>Total</b>                          | 1947                         | -98           | 1849  | 1387                         | 83            | 1470  |

\*Secondary also includes teachers with assignments in both secondary and elementary grades

\*\*Includes demand in this subject at the elementary level

Table 18 shows projected demand by subject and specialty areas. Overall, demand is higher in the 2006–07 to 2010–11 projection period than in the 2011–12 to 2014–15 period. Demand is highest for elementary grades, administration, and resource. Other subjects in higher demand include English, social studies, mathematics, science, and fine arts.

In Table 19, the academic majors and minors of newly certified teachers in Nova Scotia (with a Nova Scotia postal code) were tabulated to show trends related to supply by subject/specialty area over the last three years. Appendix 4 outlines the related disciplines used to produce the numbers for each subject/specialty area.

**Table 19: Academic Majors/Minors of Teacher Certification Recipients (with a Nova Scotia Postal Code)**

|                                       | Initial Teaching Certificates Issued by Undergraduate* |            |            |            |            |            |
|---------------------------------------|--|------------|------------|------------|------------|------------|
|                                       | 2004   |            | 2005       |            | 2006       |            |
|                                       | Major  | Minor      | Major      | Minor      | Major      | Minor      |
| <b>Secondary</b>                      | <b>471</b>   | <b>399</b> | <b>603</b> | <b>470</b> | <b>601</b> | <b>397</b> |
| English                               | 94   | 120        | 156        | 106        | 157        | 93         |
| French                                | 36   | 32         | 36         | 39         | 40         | 26         |
| Other languages                       | 4  | 5          | 9          | 6          | 1          | 3          |
| Social studies                        | 152  | 126        | 172        | 190        | 219        | 171        |
| Mathematics                           | 23   | 34         | 28         | 26         | 28         | 27         |
| Science                               | 80   | 58         | 104        | 64         | 94         | 47         |
| Biology                               | 44   | 41         | 73         | 39         | 66         | 17         |
| Chemistry                             | 21   | 10         | 16         | 13         | 12         | 18         |
| Physics                               | 10   | 6          | 8          | 5          | 7          | 1          |
| General and other sciences            | 5  | 1          | 7          | 7          | 9          | 11         |
| Physical education                    | 14   | 3          | 10         | 2          | 11         | 3          |
| Fine arts                             | 42   | 4          | 38         | 15         | 20         | 9          |
| Music                                 | 20   | 0          | 15         | 4          | 9          | 4          |
| Other                                 | 22   | 4          | 23         | 11         | 11         | 5          |
| Technology education                  | 6  | 5          | 10         | 4          | 1          | 2          |
| Business education                    | 14   | 12         | 36         | 18         | 27         | 13         |
| Personal development/career education | NE   | NE         | NE         | NE         | NE         | NE         |
| Family studies                        | 6  | 0          | 4          | 0          | 3          | 3          |

\*For teachers with a Nova Scotia postal code

NE: No Endorsation

Table 19 used Secondary Education Endorsations—Related Disciplines (see Appendix 4)

## 8.2 Projected Teacher Supply by Subject Area

The supply by subject is based on the academic major and minor of newly certified teachers. While the supply of newly certified teachers has increased over the past two years, the increase is not evenly distributed across all subject areas. As shown in Table 19, the largest increases have been for teachers with a major in English, social studies, sciences, and business education. There has been a relatively smaller increase in the number of newly certified teachers with a major in biology, while other subject areas, such as fine arts, technology education, physical education, and physics show some decreases.

## 8.3 Projected Imbalances

### Elementary and Secondary Teachers

As shown in Table 20, average annual demand for most subjects is projected to decrease in the second half of the projection period. However, demand is projected to increase in the second half of the projection period for elementary, French, music, personal development/career education, and family studies.

The supply of newly certified teachers (with a Nova Scotia postal code) by subject shown in Table 20 was calculated by using the secondary education endorsement disciplines outlined in Appendix 4. Not all of the supply is included, because the analysis focusses only on key subject areas.

An analysis of demand and supply by subject area shows surpluses in English and social studies and smaller surpluses in mathematics, biology, chemistry, physics, and business education. If this trend continues, there should not be an aggregate shortage in these subjects, although the market is tight for physics. The market is also tight for physical education, fine arts, and family studies. There will likely be a shortage in technology education.

The supply of French teachers implies that there may be a surplus of teachers with a major or minor in French. However, the situation is clouded by the challenge school boards face with respect to recruiting teachers who are fluent in French and have an academic background in other subject areas. Further, French first-language schools and French second-language programs within English school boards compete for the same pool of teachers. Therefore, it is anticipated that school boards will continue to face challenges in recruiting qualified teachers to teach subjects in French first- and second-language programs.

In addition, with enrolment in early immersion showing a consistent increase over the years, there is a potential concern that even more immersion teachers may be required. However, there has been a steady decrease in integrated French during the same time, which may be due partly to schools' electing to offer French immersion programming rather than integrated French. As well, there has been an enrolment decrease of approximately 500 in late immersion since 2003–04, which may be due partly to recent increases in the number of schools offering early immersion programs. Enrolment may also be declining due to other reasons, such as when students move or select other programs. As a result, teachers who teach in programs that have been replaced by others may in some cases be allocated to the new programs.

The supply of elementary teachers is equal to the average annual demand. It is possible that the demand for elementary teachers may be met by the continuing oversupply of teachers with academic backgrounds in secondary endorsement subjects.



**Table 20: Secondary and Elementary Supply and Projected Demand by Selected Subject Areas**

|   | Initial Teaching Certificates Issued in 2006 by Undergraduate* |            | Projected Average Annual Demand |                            |
|---|--|------------|---------------------------------|----------------------------|
|   | Major  | Minor      | 2006-07 through to 2010-11      | 2011-12 through to 2014-15 |
| <b>Secondary</b>                                      | <b>601</b>   | <b>397</b> | <b>88</b>                       | <b>84</b>                  |
| English   | 157  | 93         | 15                              | 14                         |
| French  | 40   | 26         | 4                               | 7                          |
| Other languages                                       | 1  | 3          | 0                               | 0                          |
| Social studies  | 219  | 171        | 12                              | 10                         |
| Mathematics   | 28   | 27         | 14                              | 11                         |
| Science   | 94   | 47         | 9                               | 7                          |
| Biology   | 66   | 17         | 3                               | 2                          |
| Chemistry   | 12   | 18         | 1                               | 1                          |
| Physics   | 7  | 1          | 1                               | 1                          |
| General and other sciences                            | 9  | 11         | 4                               | 3                          |
| Physical education                                    | 11   | 3          | 7                               | 6                          |
| Fine arts   | 20   | 9          | 10                              | 11                         |
| Music   | 9  | 4          | 5                               | 7                          |
| Other   | 11   | 5          | 5                               | 5                          |
| Technology education                                  | 1  | 2          | 4                               | 4                          |
| Business education                                    | 27   | 13         | 3                               | 1                          |
| Personal development/career education                 | NE   | NE         | 4                               | 5                          |
| Family studies  | 3  | 3          | 2                               | 3                          |
| <b>Elementary</b><br>(equal to average annual demand) | <b>171</b>   | <b>N/A</b> | <b>163</b>                      | <b>179</b>                 |
| <b>Total</b>  | <b>772</b>   | <b>–</b>   | <b>251</b>                      | <b>263</b>                 |

\*For teachers with a Nova Scotia postal code

NE: No endorsement

Table 20 used Secondary Education Endorsations—Related Disciplines (see Appendix 4)

**Table 21: Administration and Student Support Services Supply and Projected Demand**

|   | Projected Average Annual Demand |                            |
|---|---------------------------------|----------------------------|
|   | 2006-07 through to 2010-11      | 2011-12 through to 2014-15 |
| <b>Administration</b>                                   | 77                              | 61                         |
| <b>Education support</b>                                |                                 |                            |
| Speech therapy  | 2                               | 2                          |
| Testing services (school psychologists, psychometrists) | 1                               | 1                          |
| Social work   | 0.5                             | 0                          |
| Other   | 2                               | 0.5                        |
| <b>Guidance</b>   | 6                               | 5                          |
| <b>Resource</b>   | 31                              | 35                         |
| <b>Total</b>  | <b>119</b>                      | <b>104</b>                 |

### **Administration**

Demand for administrators is estimated to be 77 FTEs per year for the first part of the projection period, falling to 61 in the second period (see Table 21). Currently, there are 130 teachers enrolled in the Educational Leadership and Administration program at St. Francis Xavier University, approximately 43 in the Leadership and School Development program at Acadia University, and 60 students in the Educational Leadership cohort at Mount Saint Vincent University.

Depending on the number completing the program each year, there may be sufficient numbers to meet future demand. However, some school boards have reported challenges in recruiting for vice-principal and principal positions. The completion of an administration program may not mean that teachers intend to apply for administration positions. The number of teachers participating in and completing these programs, as well as school board recruiting results, needs to be monitored regularly to ensure that there will be a sufficient supply of administrators to meet demand.

### **Education Support**

Education support includes such supports as speech-language pathologists and school psychologists. Demand is estimated to be approximately four FTEs per year. Mount Saint Vincent University currently has 20 students enrolled in the Master of Arts in School Psychology program (11 others graduated in October 2007). Dalhousie University currently has 71 students enrolled in the three-year speech-language pathology program (23 are currently in their third year), and 28 students are enrolled in the three-year audiology program (7 are currently in their third year). The demand for these services is not rising, but the loss of one or two FTEs has a significant impact, since they are specialists and are difficult to replace. Schools have to compete with health boards, private practice, and other provinces for these positions, making it difficult to attract individuals and to retain them on their staff.

### **Guidance**

The demand for qualified school guidance counsellors is estimated to range from five to six FTEs per year. Currently, there are approximately 57 teachers enrolled (19 full-time, 38 part-time) in the counselling program at Acadia University, with another cohort of up to 20 teachers to be enrolled part time beginning in January. It is anticipated that there are sufficient numbers to meet expected future demand for guidance.

### **Resource**

Demand for qualified resource teachers is approximately 31 to 35 FTEs per year. To address supply needs, Acadia offers a program for resource teachers with approximately 20–23 students per cohort (currently two cohorts in progress). St. Francis Xavier will be offering a program for French immersion resource teachers in the near future. As well, Mount Saint Vincent has been offering specific programming for resource teachers in Nova Scotia, admitting between three and four cohorts each year with approximately 20 teachers per cohort. These cohorts have included both existing resource teachers upgrading their qualifications and teachers interested in the resource field.

## 9. Other Labour Market Considerations

### 9.1 Earlier Hiring

Since 2003 the Department of Education has co-ordinated early-hiring job fairs for graduating BEd students, held at the four Nova Scotia universities that offer BEd programs. At these events, school boards interview graduating students. The early-hiring job fairs are intended to assist school boards in addressing their demand for teachers in specific subject areas as well as to enable the school boards to hire graduating students before they are recruited out of the province. Primary areas of hiring have been French, math/sciences, and graduates from equity groups.

The number of early offers made has increased since 2004:

| Year | Number of Early Hires |
|------|-----------------------|
| 2004 | 21                    |
| 2005 | 38                    |
| 2006 | 32                    |
| 2007 | 41                    |

In 2007 most early offers were made to French teachers (both elementary and secondary), followed by math/science teachers. Details on applicants, interviews, and offers organized by teachable subject area are located in Appendix 5.



## 10. Conclusion

Nova Scotia has seen significant growth in the number of teachers being certified each year. Over the last three years there has been a 25 percent increase in the number of teachers available for filling supply needs. This has resulted in a much larger substitute teacher pool.

The status of the teacher labour market in Nova Scotia has improved since the 2004 update report in terms of addressing subject area shortages. However, there is a concern about a potential shortage in technology education and a tight market in physics, physical education, fine arts, family studies, and French. There is also a possibility that some geographical areas throughout the province may have difficulties in obtaining new teachers. In areas of shortage, continued effort is required to recruit students with appropriate backgrounds to meet these subject areas needs.

Although the substitute pool is projected overall to be large enough to meet demand in peak periods, boards report that it is often difficult to acquire sufficient substitute teachers to meet the demand in their region, especially for certain subject and specialty areas.



## Appendix 1: Projected Enrolments by Grade Level and Estimated Teacher FTEs

Projected Enrolments by Grade Level and Estimated Teacher Full-Time Equivalents (FTEs) for Nova Scotia  
(Based on eight-year average)

|                                 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|---------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Enrolments</b>               |         |         |         |         |         |         |         |         |         |
| Elementary                      | 67,305  | 65,310  | 65,630  | 64,373  | 63,258  | 62,212  | 61,375  | 61,060  | 60,859  |
| Junior High                     | 34,077  | 32,911  | 32,012  | 30,898  | 29,899  | 28,961  | 28,309  | 27,384  | 26,509  |
| Senior High                     | 37,279  | 36,791  | 35,465  | 34,456  | 33,270  | 32,364  | 31,282  | 30,288  | 29,357  |
| Total                           | 138,661 | 135,012 | 133,107 | 129,727 | 126,427 | 123,537 | 120,966 | 118,732 | 116,725 |
| <b>Students per teacher FTE</b> |         |         |         |         |         |         |         |         |         |
| Elementary                      | 16.3    | 16      | 15.8    | 15.5    | 15.3    | 15      | 14.8    | 14.6    | 14.3    |
| Junior High                     | 16      | 15.9    | 15.7    | 15.6    | 15.4    | 15.3    | 15.1    | 15      | 14.8    |
| Senior High                     | 18.8    | 18.8    | 18.7    | 18.6    | 18.6    | 18.5    | 18.4    | 18.4    | 18.3    |
| Administrators                  | 167.9   | 163.5   | 161.1   | 157.1   | 153.1   | 149.6   | 146.4   | 143.7   | 141.3   |
| <b>Teacher FTEs</b>             |         |         |         |         |         |         |         |         |         |
| Elementary                      | 4138    | 4080    | 4165    | 4151    | 4144    | 4141    | 4150    | 4195    | 4248    |
| Junior High                     | 2126    | 2073    | 2036    | 1985    | 1939    | 1897    | 1872    | 1829    | 1788    |
| Senior High                     | 1980    | 1961    | 1897    | 1850    | 1793    | 1750    | 1698    | 1650    | 1605    |
| Administrators                  | 826     | 826     | 826     | 826     | 826     | 826     | 826     | 826     | 826     |
| Total                           | 9070    | 8940    | 8925    | 8811    | 8702    | 8614    | 8547    | 8500    | 8467    |
| <b>Annual FTE change</b>        |         |         |         |         |         |         |         |         |         |
| Elementary                      | -60     | -58     | 86      | -14     | -7      | -3      | 10      | 45      | 53      |
| Junior High                     | -55     | -53     | -37     | -52     | -45     | -42     | -25     | -43     | -41     |
| Senior High                     | -11     | -19     | -64     | -47     | -57     | -42     | -52     | -48     | -45     |
| Administrators                  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| Total                           | -126    | -130    | -15     | -113    | -109    | -88     | -67     | -47     | -33     |

## Appendix 2: Age Distribution of Permanent and Probationary Teachers, 2005–06

### Age Distribution of Permanent and Probationary Teachers, 2005–06

| Age Group               | Number      | Percent    | Cumulative Percent |
|-------------------------|-------------|------------|--------------------|
| 20-24                   | 0           | 0          | 0                  |
| 25-29                   | 222         | 2.7        | 2.7                |
| 30-34                   | 794         | 9.5        | 12.2               |
| 35-39                   | 1139        | 13.7       | 25.9               |
| 40-44                   | 996         | 12         | 37.9               |
| 45-49                   | 1230        | 14.8       | 52.7               |
| 50-54                   | 1849        | 22.2       | 74.9               |
| 55-59                   | 1783        | 21.4       | 96.3               |
| 60-64                   | 285         | 3.4        | 99.8               |
| 65-69                   | 20          | 0.2        | 100                |
| <b>Total</b>            | <b>8318</b> | <b>100</b> | <b>100</b>         |
| <b>Average Age = 47</b> |             |            |                    |



## Appendix 3: Teacher Pension Plan Retirement and Disability Assumptions

### Interpreting this Data

In the top part of the chart that follows, the second column on the left identifies for each year the number of teachers that will first become eligible to retire with an unreduced pension. Moving to the right across each row, the percentages identify how many of those teachers are projected to retire and when.

In the bottom part of the chart, the second column repeats the number of teachers who will first become eligible to retire with an unreduced pension. The percentages in each row from the top chart are applied to these totals to identify how many teachers are projected to retire and when.

For example, the bottom chart shows that in 2010–11, a total of 359 teachers will first become eligible for an unreduced pension. From the top chart, the percentages across the row for 2010–11 are applied to this total: in 2006–07, 2.2 percent (8) were projected to retire; in 2007–08, 2.4 percent (9) were projected to retire; in 2008–09, 4.3 percent (15) are projected to retire, etc.

## Teacher Pension Plan Retirement and Disability Assumptions

| First Become Eligible to Retire with Unreduced Pension | Number Eligible for Unreduced Pension | Projected to Retire (totals in bold at bottom of chart) |              |              |            |            |            |            |            |            |
|--|---------------------------------------|---|--------------|--------------|------------|------------|------------|------------|------------|------------|
|  |                                       | 2006-07   | 2007-08      | 2008-09      | 2009-10    | 2010-11    | 2011-12    | 2012-13    | 2013-14    | 2014-15    |
| Before 2006-07   | 321                                   | 35.7%   | 25.4%        | 18.0%        | 12.5%      | 8.4%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| 2006-07  | 326                                   | 57.4%   | 14.6%        | 10.4%        | 7.9%       | 6.0%       | 3.8%       | 0.0%       | 0.0%       | 0.0%       |
| 2007-08  | 376                                   | 12.7%   | 50.3%        | 12.3%        | 9.8%       | 6.3%       | 6.0%       | 2.7%       | 0.0%       | 0.0%       |
| 2008-09  | 356                                   | 4.2%  | 11.3%        | 47.6%        | 12.9%      | 10.4%      | 6.6%       | 6.0%       | 1.1%       | 0.0%       |
| 2009-10  | 331                                   | 2.3%  | 4.2%         | 10.6%        | 46.6%      | 13.1%      | 11.0%      | 6.7%       | 5.5%       | 0.0%       |
| 2010-11  | 359                                   | 2.2%  | 2.4%         | 4.3%         | 10.9%      | 45.9%      | 14.1%      | 11.2%      | 6.8%       | 2.2%       |
| 2011-12  | 340                                   | 2.2%  | 2.1%         | 2.5%         | 4.1%       | 11.3%      | 45.9%      | 14.4%      | 11.5%      | 5.9%       |
| 2012-13  | 325                                   | 0.4%  | 2.1%         | 2.1%         | 2.3%       | 4.6%       | 12.3%      | 45.9%      | 14.9%      | 12.5%      |
| 2013-14  | 289                                   | 0.6%  | 0.4%         | 2.1%         | 2.4%       | 2.4%       | 5.2%       | 12.6%      | 45.9%      | 16.4%      |
| 2014-15  | 310                                   | 0.2%  | 0.8%         | 0.5%         | 2.1%       | 2.9%       | 2.7%       | 5.4%       | 13.1%      | 45.9%      |
| 2015-16  | 281                                   | 0.2%  | 0.4%         | 0.6%         | 0.5%       | 2.4%       | 2.9%       | 2.8%       | 5.7%       | 14.6%      |
| 2016-17  | 265                                   | 0.1%  | 0.2%         | 0.3%         | 0.4%       | 0.5%       | 2.4%       | 2.9%       | 3.0%       | 6.7%       |
| First Become Eligible to Retire with Unreduced Pension | Number Eligible for Unreduced Pension | Projected to Retire (totals in bold at bottom of chart) |              |              |            |            |            |            |            |            |
| Before 2006-07   | 321                                   | 115   | 81           | 58           | 40         | 27         | 0          | 0          | 0          | 0          |
| 2006-07  | 326                                   | 187   | 48           | 34           | 26         | 19         | 12         | 0          | 0          | 0          |
| 2007-08  | 376                                   | 48  | 189          | 46           | 37         | 24         | 22         | 10         | 0          | 0          |
| 2008-09  | 356                                   | 15  | 40           | 169          | 46         | 37         | 23         | 21         | 4          | 0          |
| 2009-10  | 331                                   | 8   | 14           | 35           | 154        | 43         | 36         | 22         | 18         | 0          |
| 2010-11  | 359                                   | 8   | 9            | 15           | 39         | 165        | 51         | 40         | 25         | 8          |
| 2011-12  | 340                                   | 8   | 7            | 9            | 14         | 38         | 156        | 49         | 39         | 20         |
| 2012-13  | 325                                   | 1   | 7            | 7            | 8          | 15         | 40         | 149        | 48         | 41         |
| 2013-14  | 289                                   | 2   | 1            | 6            | 7          | 7          | 15         | 36         | 133        | 47         |
| 2014-15  | 310                                   | 1   | 2            | 2            | 7          | 9          | 8          | 17         | 40         | 142        |
| 2015-16  | 281                                   | 1   | 1            | 2            | 1          | 7          | 8          | 8          | 16         | 41         |
| 2016-17  | 265                                   | 0   | 1            | 1            | 1          | 1          | 6          | 8          | 8          | 18         |
|  | <b>Total</b>                          | <b>393</b>  | <b>400</b>   | <b>383</b>   | <b>379</b> | <b>392</b> | <b>379</b> | <b>360</b> | <b>331</b> | <b>317</b> |
|  | <b>Adjustments</b>                    | <b>280*</b>   | <b>490**</b> | <b>406**</b> |            |            |            |            |            |            |

\*Actual retirement/disability count (280) available and provided by the Nova Scotia Pension Agency July 2007 (113 less than projected). Most teachers who did not retire before the indexing change in 2005–06 likely intend to teach a few more years before retiring (i.e., the "anti-selection" effect).

\*\*113 expected retirements left over from 2006–07 allocated to 2007–08 and 2008–09 on an 80/20 split on direction from Nova Scotia Pension Agency.

Note: The teacher retirement and disability assumptions were provided by the Department of Finance staff, based on analysis of five years of pension data.

## Appendix 4: Secondary Education Endorsation Disciplines

| Subject Field                           | Secondary Education Endorsations—Related Disciplines                                    |  |
|---|---|--|
| 1. English                              | 1.1 English   |  |
| 2. French*                              | 2.1 French  |  |
| 3. Languages                            | 3.1 Latin<br>3.2 German<br>3.3 Spanish  | 3.4 Gaelic<br>3.5 Mi'kmaq  |
| 4. Social Studies                       | 4.1 History<br>4.2 Geography<br>4.3 Political science<br>4.4 Sociology<br>4.5 Economics | 4.6 Law<br>4.7 Classics<br>4.8 African Canadian studies<br>4.9 Mi'kmaq<br>4.10 Acadian studies |
| 5. Mathematics                          | 5.1 Mathematics   |  |
| 6. Science                              | 6.1 Biology<br>6.2 Chemistry<br>6.3 Physics   | 6.4 Geology/earth sciences<br>6.5 Oceanography<br>6.6 Environmental studies                    |
| 7. Physical education/health education* | 7.1 Physical education  |  |
| 8. Health education                     | 8.1 Health  |  |
| 9. Fine arts*                           | 9.1 Visual arts<br>9.2 Music<br>9.3 Drama   | 9.4 Dance<br>9.5 Theatre arts  |
| 10. Technology education                | 10.1 Technology education   | 10.2 Computer science  |
| 11. Business education                  | 11.1 Business administration<br>11.2 Commerce<br>11.3 Marketing<br>11.4 Accounting      | 11.5 Finance<br>11.6 Organizational behaviour<br>11.7 Secretarial arts                         |
| 12. Family studies                      | 12.1 Human ecology<br>12.2 Home economics   | 12.3 Food science  |

\*Subject fields endorsement valid in both elementary and secondary schools.

## Appendix 5: Early Hiring Job Fair—2005

| First Teachable       | Number of Applicants | Number Interviews | Percent    | Students with Offers | Percent    |
|-----------------------|----------------------|-------------------|------------|----------------------|------------|
| Elementary (English)  | 127                  | 50                | 39%        | 6                    | 12%        |
| Elementary (French)   | 18                   | 18                | 100%       | 6                    | 33%        |
| English language arts | 37                   | 20                | 54%        | 7                    | 35%        |
| French                | 25                   | 25                | 100%       | 12                   | 48%        |
| Math/science          | 63                   | 48                | 76%        | 14                   | 29%        |
| Social studies        | 27                   | 11                | 41%        | 2                    | 18%        |
| Physical education    | 10                   | 3                 | 30%        | 0                    | 0%         |
| Technology education  | 1                    | 1                 | 100%       | 0                    | 0%         |
| Visual arts           | 6                    | 4                 | 67%        | 1                    | 25%        |
| Family studies        | 0                    | 0                 | 0%         | 0                    | 0%         |
| Music                 | 4                    | 2                 | 50%        | 0                    | 0%         |
| Counselling           | 9                    | 6                 | 66%        | 2                    | 33%        |
| <b>Total</b>          | <b>327</b>           | <b>188</b>        | <b>57%</b> | <b>50</b>            | <b>27%</b> |
| Aboriginal            | 4                    | 4                 | 100%       | 1                    | 25%        |
| Visible minority      | 7                    | 6                 | 86%        | 3                    | 50%        |

The offers made after February 28, 2007, by the Halifax Regional School Board, although not included in the table above, were primarily made to students with a teachable subject in French: of the 42 offers, 24 were for French or elementary (French), while 8 were for math/science.

## References

- Alberta Learning. *Report of the Advisory Committee on Future Teacher Supply and Demand in Alberta*. Edmonton, Alberta: Province of Alberta, 2003.
- British Columbia Public School Employers' Association. *Backgrounder: Teacher Supply and Demand*. Vancouver, British Columbia. 2006.
- Colorado Department of Education. *Teacher Supply and Demand in the State of Colorado*. Denver, Colorado: Robert Reichardt, 2003.
- Department of Education Services. *Teacher Supply and Demand and Student Placements in Western Australia—Strategic Issues*. Perth, Western Australia. 2006.
- Florida State Board of Education. *Critical Teacher Shortage Areas 2006-2007*. Tallahassee, Florida. 2005.
- Illinois State Board of Education. *Educator Supply and Demand in Illinois*. Springfield, Illinois. 2005.
- Levin, Driscoll & Fleeter. *Condition of Teacher Supply and Demand in Ohio: A Data Summary for the Ohio State Board of Education*. Columbus, Ohio. June, 2005.
- Manitoba Interorganizational Committee. *Teacher Supply and Demand in Manitoba*. Winnipeg, Manitoba. 2002.
- Ministerial Council on Education, Employment, Training and Youth Affairs. *Demand and Supply of Primary and Secondary School Teachers in Australia*. Carlton South, Victoria. 2003.
- Minnesota Department of Education. *Teacher Supply and Demand*. Roseville, Minnesota. 2007.
- New Brunswick Department of Education. *Teacher Supply/Demand Province of New Brunswick*. Fredericton, New Brunswick: William Mercer, 2002.
- New York State Education Department. *Review of Regents Teaching Policy and Implementation of the Regents Statewide Plan for Higher Education - An Analysis of Teacher Supply and Demand in New York State*. Albany, New York. 2006.
- Ontario College of Teachers. *Teacher Supply and Demand: Report on the Consultation*. Toronto, Ontario. 2001.
- Public Education Inquiry New South Wales. *Third Report: Inquiry into the Provision of Public Education in New South Wales*. Darlinghurst, New South Wales. 2002.
- Southern Regional Education Board. *2003 Study of Teacher Supply and Demand in Tennessee*. Atlanta, Georgia. 2003.
- Teacher Supply and Demand Reference Group. *Teacher Supply and Demand Report*. Melbourne, Victoria. 2005.
- US Department of Education. *Teacher Shortage Areas Nationwide Listing 1990-91 thru 2005-06*. Washington, District of Columbia. 2006.
- Virginia Department of Education. *State of Virginia Critical Shortage Teaching Endorsement Areas*. Richmond, Virginia. 2006.
- Wisconsin Educator Supply and Demand Project. *Data Trends of Education Personnel in Wisconsin Public Schools: Supply and Demand*. Madison, Wisconsin: Thomas Fisher & Wayne Swanger, 2005.