Projections of Teaching Staff in Québec School Boards and Recruitment Requirements

Raymond Ouellette Direction des statistiques et des études quantitatives Ministère de l'Éducation du Québec

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> > Translation

Summary

For several years, the Direction des statistiques et des études quantitatives of the Ministère de l'Éducation has been producing projections of teaching staff for Québec school boards¹. Historical observations (since 1989-90) and projections make it possible to describe the situation of teachers and to follow trends. Our model allows us to study the aging and mobility (especially in terms of retirement) of the teaching force. The results of these projections serve to produce a model for regulating pre-service teacher education programs and entry into the teaching force.

Observations from the fall of 2000 and winter of 2001 add three new years to the data presented in the *Education Statistics Bulletin No. 9*, and projections are available to 2011-2012. The findings are quite surprising in the light of the most recent student enrolment projections. Much smaller cohorts in 2003-2004 will produce a decline in enrolments in Quebec similar to that of 1975 (20% as opposed to 33%).

Between 2000-2001 and 2011-2012, there will be a 15% decrease in teaching staff; the average age of the teachers will vary between 44 and 45 years; and the profession will continue to attract mainly women, the proportion climbing from 69% in 1998-1999 to 77% in 2011-2012! Recruitment needs today accounting for more than 4 000 teachers will drop to fewer than 2 000 in 2007-2008. These needs represent 4% of the teaching staff today but only 2.5% in 2008-2009.

Non-recurrent events punctuate changes in the teaching force: incentives for voluntary early retirement; the move from part-time to full-time kindergarten for five-year-olds; the introduction of linguistic school boards; changes in student/teacher ratios in kindergarten and Elementary Cycle One; and the new basic school regulation.

[Refer to the glossary for a definition of the highlighted words.]

¹Projections and their analysis are published by the Ministère de l'Éducation du Québec. The statistics produced for the fall of 1997 to the winter of 1998 appear in the Education Statistics Bulletin No. 9: *Projections of Teaching Staff in Québec School Boards:* 1996-97 to 2008-09 and can be found in electronic format on the MEQ Internet site at http://www.meq.gouv.qc.ca. The original document is translated in English. Projections produced for the fall of 2000 to the winter of 2001 will be published in the summer of 2001.

Teaching Staff

For several years, the Direction des statistiques et des études quantitatives of the Ministère de l'Éducation has been producing projections of teaching staff for Québec school boards. Historical observations (since 1989-90) and projections make it possible to describe the situation of teachers and to follow trends. Our model allows us to study the aging and mobility (especially in terms of retirement) of the teaching force. The results of these projections serve to produce a model for regulating pre-service teacher education programs and entry into the teaching force.

In 1998-1999, approximately 92 750 teachers taught in Québec school boards. Slightly more than 57 450 of them were employed full-time (permanent status), accounting for 74 % of full-time equivalents (FTEs), whereas part-time teaching staff (16 540) represented 16% of FTEs and by-the-lesson, hourly-paid or substitute (occasional) teachers (18 750).

The projections presented here are based on 1998-1999 as the observation year, taking into account:

▷ annual observation data (and not only data observed as of September 30);

▷ new student/teacher ratios from kindergarten for five-year-olds to Elementary Cycle One;

▷ and the curriculum reform.

All projections, tables and indicators are found in the information system for managers on teacher employment (Système d'information pour dirigeants sur l'emploi du personnel enseignant – SIDE), a software program on employment in education. Available for consultation are statistical tables on teaching staff, on access to teaching certificates, access to the teaching profession, postings, mobility and recruitment requirements, as well as various tables on the regulation of pre-service teacher education programs in university.



SIDE logo

This study concerns only full-time or part-time teaching staff because not only do they make up slightly more than 90 % of FTEs but also their employment is contingent on their being qualified to teach and the projections produce a model for the regulation of pre-service teacher education.

The populations studied are presented in Table 1, by field of teaching and employment status. These are annual data for the period of July 1, 1998 to June 30, 1999².

²Data as of September 30 greatly underestimate teaching staff because almost 5 000 part-time teachers and approximately 575 fulltime permanent teachers are omitted.

Annual Data	Full-t	ime Permane	ent Staff	Part-time Staff				
(1998-1999)	number	% of	average	number	% of	average		
Field of Teaching	number	Women	age	number	Women	age		
Special education	6 557	70.9	42.2	1 694	86.0	31.6		
Preschool education	4 533	98.3	42.3	715	97.5	33.9		
Elementary education	21 000	87.7	43.7	4 086	91.6	34.7		
Mathematics and science	5 378	42.1	44.3	1 536	54.5	35.0		
Language of instruction	3 656	65.5	44.9	1 304	80.8	37.9		
General education ³	5 328	38.7	46.2	1 840	58.4	35.0		
Specialities	9 087	52.7	44.5	3 130	63.3	34.7		
Vocational education	1 917	34.0	49.5	2 234	38.0	41.5		
Adult education	(592)*	68.9	49.5	(2 075)*	74.3	43.9		
*already included in each field	(392)	00.9	49.3	(2073)	/4.3	43.9		
All fields	57 456	69.1	44.1	16 539	70.7	35.6		

 Table 1
 Teaching staff in Québec school boards in 1998-1999 by field of teaching and employment status

Full-time permanent staff are more numerous and older than part-time staff and there are slightly fewer women. In 1998-1999, close to 70% of the 57 456 teachers with permanent positions were women, compared with more than 70% of the 16 539 part-time teachers. A difference of more than eight years exists between the average age of full-time staff (44.1 years old on September 30, 1998) and of part-time staff (35.6).

Projections have been estimated for eight fields of teaching. The ninth field, adult education, whose teaching staff have already been included in the eight other fields, appears only for information purposes. Four fields deal with secondary education only: mathematics and science, language of instruction, general education, and vocational education. Two fields concern both elementary and secondary education: special education and specialties (second language, physical education, music and the arts).

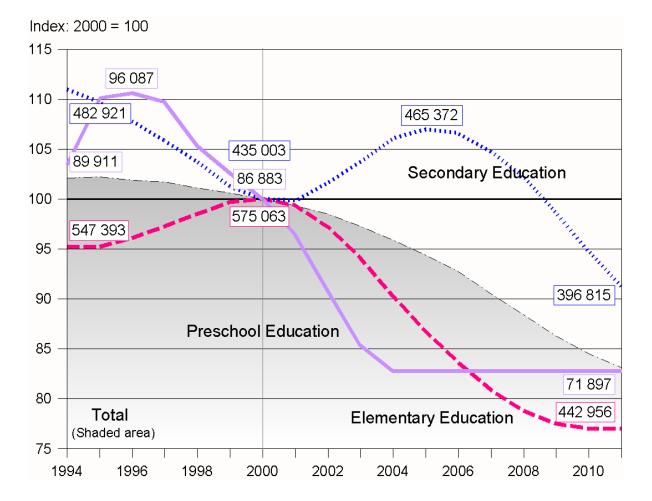
The largest field, elementary education, comprises 36% of the permanent staff and more than one quarter of the part-time staff; approximately 9 teachers out of 10 are women (preschool education staff, which are almost exclusively female, are not counted here). The smallest proportion of women is found in the fields of vocational education and secondary general education, followed closely by the fields of mathematics and science. The differences in age by field are sometimes significant: with respect to permanent staff, there is a difference of 7.3 years between vocational education teachers, the oldest field, and special education teachers, the youngest group. The age difference is about 10 years for these two fields for part-time staff.

³General education is a field created for projection models and includes religious and moral instruction, social studies and any otherfield not already specified for secondary education.

Demand

Changes in the teaching force are closely tied to changes in student enrolments. If the same student-teacher ratio is maintained, and if student enrolments are expected to decrease, then fewer teachers will be required. This number of teachers is calculated for each field of teaching, with the first key variable being an estimate of student enrolments for each level of instruction.

Graph 1 Trends relative to student enrolments in Québec school boards by level of instruction, 2000-2001 to 2011-2012



The three curves and the shaded area in the above graph are relative indices whose base is the 2000-2001 school year. Figures indicate the minimum and maximum variations of these curves.

Student enrolments in elementary and secondary education are expected to evolve in radically opposite directions until 2006-2007. The growth in the number of births at the end of the 1980s resulted in an increase in the number of students enrolled in elementary school through 2000, and this increase will subsequently be

felt at the secondary level. Elementary school enrolments will decline by more than 23% from 2000-2001 to 2011-2012, going from 575 063 to 442 956.

The opposite is happening at the secondary level: during the growth period at the elementary level, the number of secondary students enrolled declined. From a low of 435 003, there will be a 7% rise in student enrolments from 2000-2001 to 2006-2007. The following year, secondary enrolments will again begin to drop because fewer students will go from elementary school to secondary school at the beginning of the years 2000.

There will be a major drop of 17% in preschool education enrolments in only four years. Then, using a rather realistic hypothesis, we estimate that enrolments will remain constant from 2004-2005 to 2011-2012.

Thus, student enrolments overall will decrease by approximately 17% between 2000-2001 and 2011-2012, for an average annual decline of 1.67%. Because the demand for teachers corresponds to the number required to teach students and we have used the same student-teacher ratio, we can expect the drop in student enrolments through 2011-2012 to result in a similar decrease in the teaching staff required. But it is not as simple as this.

Projections of teaching staff are established for each field of teaching. When a field is common to two levels of instruction, different trends in enrolments at each level cancel out or magnify the variations in teacher demand. Also, non-recurrent events may affect demand: for example, lower student/teacher ratios in kindergarten for five-year-olds and Elementary Cycle One, and curriculum reform which is expected to increase by one third the number of English, second language, teachers at the elementary level, as well as to result in more complex variations (upward or downward) in the different fields of teaching at the secondary level.

On the other hand, modification of pension plans and voluntary early retirement measures did not have any impact on teacher demand as those leaving their positions had to be replaced anyway, since the students could not be left without a teacher! We will see further on that massive departures instead had a marked impact on teacher supply and replacement hirings. Staff still employed after the various departures represent this supply.

Projections

Table 2 below presents projections for all permanent and part-time teachers in Québec school boards⁴.

Table 2 Projections of teaching staff in Québec school boards, 1999-2000 to 2011-2012, by employment status (annual data)

998-99	1999-00	2000-01	2001-02	2002 02	2002 04	
		2000-01	2001-02	2002-03	2003-04	2004-05
57 456	57 485	57 411	58 025	58 789	57 929	57 007
36	29	-74	614	764	-860	-922
2 2 4 4	2 179	2 339	2 473	2 594	2 675	2 6 5 6
1 490	1 575	1 735	1 861	1 963	2 019	2 002
2 280	2 207	2 265	3 087	3 358	1 815	1 734
16 539	16 117	16 139	16 172	16 284	15 841	15 665
751	-422	22	33	112	-443	-176
2 932	3 085	2 998	2 997	3 002	3 022	2 928
2 157	2 2 3 8	2 174	2 172	2 176	2 191	2 123
3 683	2 663	3 019	3 0 3 1	3 1 1 3	2 579	2 753
3 806	2 6 3 2	3 111	3 946	4 295	2 203	2 364
005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
56 004	54 909	53 645	52 387	51 178	50 163	49 302
-1 003	-1 095	-1 264	-1 258	-1 209	-1 015	-861
2 589	2 516	2 481	2 476	2 4 4 1	2 367	2 283
1 933	1 864	1 836	1 843	1 823	1 767	1 699
1 586	1 420	1 217	1 218	1 232	1 352	1 421
15 465	15 235	14 955	14 668	14 384	14 153	13 955
-200	-230	-280	-288	-283	-231	-198
2 893	2 852	2 807	2 7 5 2	2 696	2 642	2 598
2 0 9 2	2 058	2 0 2 2	1 981	1 940	1 902	1 872
2 693	2 623	2 527	2 464	2 413	2 411	2 400
2 187	1 985	1 722	1 701	1 704	1 861	1 950
	36 2 244 1 490 2 280 6 539 751 2 932 2 157 3 683 3 806 05-06 56 004 -1 003 2 589 1 933 1 586 5 465 -200 2 893 2 092 2 693	36 29 2 244 2 179 1 490 1 575 2 280 2 207 16 539 16 117 751 -422 2 932 3 085 2 157 2 238 3 683 2 663 3 806 2 632 005-06 2006-07 56 004 54 909 -1 003 -1 095 2 589 2 516 1 933 1 864 1 586 1 420 15 465 15 235 -200 -230 2 893 2 852 2 092 2 058 2 693 2 623	36 29 -74 2244 2179 2339 1490 1575 1735 2280 2207 2265 2539 16117 16139 751 -422 22 2932 3085 2998 2157 2238 2174 3683 2663 3019 3806 2632 3111 $05-06$ $2006-07$ $2007-08$ 56004 54909 53645 -1003 -1095 -1264 2589 2516 2481 1933 1864 1836 1586 1420 1217 15465 15235 14955 -200 -230 -280 2893 2852 2807 2092 2058 2022 2693 2623 2527	36 29 -74 614 $2 244$ $2 179$ $2 339$ $2 473$ $1 490$ $1 575$ $1 735$ $1 861$ $2 280$ $2 207$ $2 265$ $3 087$ $16 539$ $16 117$ $16 139$ $16 172$ 751 -422 22 33 $2 932$ $3 085$ $2 998$ $2 997$ $2 157$ $2 238$ $2 174$ $2 172$ $3 683$ $2 663$ $3 019$ $3 031$ $3 806$ $2 632$ $3 111$ $3 946$ $005-06$ $2006-07$ $2007-08$ $2008-09$ $56 004$ $54 909$ $53 645$ $52 387$ $-1 003$ $-1 095$ $-1 264$ $-1 258$ $2 589$ $2 516$ $2 481$ $2 476$ $1 933$ $1 864$ $1 836$ $1 843$ $1 586$ $1 420$ $1 217$ $1 218$ $15 465$ $15 235$ $14 955$ $14 668$ -200 -230 -280 -288 $2 893$ $2 852$ $2 807$ $2 752$ $2 092$ $2 058$ $2 022$ $1 981$ $2 693$ $2 623$ $2 527$ $2 464$	36 29 -74 614 764 $2 244$ $2 179$ $2 339$ $2 473$ $2 594$ $1 490$ $1 575$ $1 735$ $1 861$ $1 963$ $2 280$ $2 207$ $2 265$ $3 087$ $3 358$ $6 539$ $16 117$ $16 139$ $16 172$ $16 284$ 751 -422 22 33 112 $2 932$ $3 085$ $2 998$ $2 997$ $3 002$ $2 157$ $2 238$ $2 174$ $2 172$ $2 176$ $3 683$ $2 663$ $3 019$ $3 031$ $3 113$ $3 806$ $2 632$ $3 111$ $3 946$ $4 295$ $05-06$ $2006-07$ $2007-08$ $2008-09$ $2009-10$ $56 004$ $54 909$ $53 645$ $52 387$ $51 178$ $-1 003$ $-1 095$ $-1 264$ $-1 258$ $-1 209$ $2 589$ $2 516$ $2 481$ $2 476$ $2 441$ $1 933$ $1 864$ $1 836$ $1 843$ $1 823$ $1 586$ $1 420$ $1 217$ $1 218$ $1 232$ $15 465$ $15 235$ $14 955$ $14 668$ $14 384$ -200 -230 -280 -288 -283 $2 893$ $2 852$ $2 807$ $2 752$ $2 696$ $2 092$ $2 058$ $2 022$ $1 981$ $1 940$ $2 693$ $2 623$ $2 527$ $2 464$ $2 413$	36 29 -74 614 764 -860 $2 244$ $2 179$ $2 339$ $2 473$ $2 594$ $2 675$ $1 490$ $1 575$ $1 735$ $1 861$ $1 963$ $2 019$ $2 280$ $2 207$ $2 265$ $3 087$ $3 358$ $1 815$ $16 539$ $16 117$ $16 139$ $16 172$ $16 284$ $15 841$ 751 -422 22 33 112 -443 $2 932$ $3 085$ $2 998$ $2 997$ $3 002$ $3 022$ $2 157$ $2 238$ $2 174$ $2 172$ $2 176$ $2 191$ $3 683$ $2 663$ $3 019$ $3 031$ $3 113$ $2 579$ $3 806$ $2 632$ $3 111$ $3 946$ $4 295$ $2 203$ $05-06$ $2006-07$ $2007-08$ $2008-09$ $2009-10$ $2010-11$ $56 004$ $54 909$ $53 645$ $52 387$ $51 178$ $50 163$ $-1 003$ $-1 095$ $-1 264$ $-1 258$ $-1 209$ $-1 015$ $2 589$ $2 516$ $2 481$ $2 476$ $2 441$ $2 367$ $1 933$ $1 864$ $1 836$ $1 843$ $1 823$ $1 767$ $1 586$ $1 420$ $1 217$ $1 218$ $1 232$ $1 352$ $15 465$ $15 235$ $14 955$ $14 668$ $14 384$ $14 153$ -200 -230 -280 -288 -283 -231 $2 893$ $2 852$ $2 807$ $2 752$ $2 696$ $2 642$ $2 092$ $2 058$ <td< td=""></td<>

Notes: Job creation, attrition, net promotions and recruitment correspond to movements of staff from the previous year to the current year. 1998-1999 is not a projection year.

This table makes it possible to study interactions between teacher demand, supply and recruitment requirements. The table should be read from top to bottom, according to the line numbering.

⁴Private sector teaching staff are not included in Table 2 because their mobility could not be modelled, given the lack of data.

- ▷ Figures in the **first line in bold** indicate the demand for permanent teachers.
- ▷ Line 1 successive variations in demand represent job creation. There may be an increase or a decrease in the number of jobs created.
- ▷ Line 2 attrition represents the number of persons that must actually be replaced; it is the difference between personnel departures and returns.
- ▷ Line 3 retirements are already included in the calculation of attrition, of which they form the main constituent, but it is important to note that personnel departures occur at all ages and for a variety of reasons.
- ▷ Lines 4 and 8 gross recruitment is the sum of attrition and job creation. It corresponds to new staff hired from part-time staff or the active pool.
- ▷ Figures on the **second line in bold** indicate the demand for part-time teachers.
- ▷ Lines 5 and 6 job creation and attrition can be explained in the same way for part-time and permanent staff.
- ▷ Line 7 net promotions correspond to the movement or promotion of part-time staff into full-time permanent positions, from which returns have been deducted; net promotions reduce recruitment requirements for permanent staff.
- ▷ On the last line, net recruitment is the sum of the gross recruitment for both employment statuses, from which net promotions have been deducted.

The data in the table indicate that the teaching force is decreasing, but at a slower pace than student enrolments. In effect, the figures in bold in Table 2 show that, even though enrolments will decrease by 17% from 2000-2001 to 2011-2012, permanent and part-time teaching staff will decrease by only 13% to 14% during the same period. Permanent staff should decrease by 8 100 teachers and part-time staff by close to 2 200 teachers (if the portion of part-time staff remains the same) from 2000-2001 to 2011-12.

Moreover, there was an increase in the teaching force from 2001-2002 to 2003-2004 caused by the changes in student-teacher ratios in kindergarten for five-year-olds and Elementary Cycle One, as well as the new basic school regulation.

During the period studied, attrition will come into play for approximately 2 500 permanent teachers and 2 850 part-time teachers (much more mobile), and the result will be a net recruitment of close to 4 300 teachers in 2002-2003, dropping rapidly to fewer than 2 000 by 2006-2007.

Mobility

The essentials of teaching force mobility have been modelled for our projections. We can observe part of these movements by reading Table 2 in the following way. Let us consider the observation data and the projections for the first year, 1999-2000. To the 57 456 teachers who are permanent, 29 must be added to meet the demands for 1999-2000, that is, 57 485 persons. But those who left their positions also need to be replaced; they are represented here by the attrition of 2 179 teachers (including 1 575 retirements), hence a gross replacement hiring of 2 207 teachers.

Because our education system would not be able to function without part-time staff, we must also consider this group. In 1999-2000, the demand for part-time staff decreased by 422 compared with the previous year, thereby bringing down recruitment requirements by the same number. However, this segment of the teaching force is much more mobile and 3 085 teachers (attrition) must be replaced. Part of the 3 085 left their positions, but 2 238 were made permanent employees, thereby reducing recruitment requirements for permanent staff.

Lastly, 2 632 teachers would have been hired to meet the 1999-2000 staffing requirements, that is, the sum of the gross recruitment of permanent staff and part-time staff, from which are deducted net promotions of part-time staff who became permanent employees.

The fine analysis of teacher mobility and the modelling of projections allow for a better comprehension of recruitment requirements. A large part of the hiring is done "internally", that is, those hired to teach for a particular year, regardless of whether they are permanent or part-time, already worked in the school boards the previous year. This was the case for 94.5% of the permanent teachers recruited and 76% part-time teachers recruited.

The various departures are in fact more numerous than the attrition described in Table 2. In effect, in a short one-year period, teacher departures are often followed by returns. The attrition expressed in Table 2 corresponds to the number of persons that must actually be replaced and not to the total number of departures.

Fields of Teaching

We stated earlier that the projections have been broken down into eight fields of teaching. Teacher demand changes differently for each field, and the composition of each field also affects these changes. The various departures and hirings are different according to the age, gender and pension plan of teachers.

All the fields of teaching will experience a decline in staff from 2000-2001 to 2011-2012, except for language of instruction, where there will be a significant increase of more than 800 teachers in 2003-2004 on account of the new basic school regulation. Mathematics and science, preschool education and vocational education are the only fields to decline less than all the other fields of teaching, while secondary general education and special education will decrease the most. Table 3 illustrates, for uneven-numbered years only (to make the table easier to read), expected trends with respect to the number of teachers required for each field of teaching.

Table 3 Projections of permanent and part-time teaching staff in school boards and private schools, by field	ł
of teaching, 1999-2000 to 2011-2012	

Field of Teaching	1998-99	1999-00	2001-02	2003-04	2005-06	2007-08	2009-10	2011-12
Special education	8 4 3 0	8 4 1 8	8 303	8 1 1 8	7 954	7 630	7 228	6 880
Preschool education	5 499	5 308	5 512	4 881	4 7 3 2	4 732	4 7 3 2	4 732
Elementary education	26 263	26 470	27 149	27 686	25 461	23 851	22 939	22 810
Mathematics and science	7 979	7 931	7 826	8 103	8 323	8 166	7 720	7 190
Language of instruction	5 676	5 627	5 557	6 463	6 6 2 9	6 504	6 1 5 8	5 747
General education	8 265	8 059	7 940	6 7 2 7	6 932	6 793	6 389	5 911
Specialities	13 501	13 407	13 565	13 615	13 357	12 826	12 166	11 613
Vocational education	4 151	4 169	4 135	4 115	4 147	4 166	4 1 2 5	4 125
Adult education ⁵	(2 667)	(2679)	(2 679)	(2 679)	(2 679)	(2 679)	(2 679)	(2 679)
Total	79 764	79 388	79 986	79 708	77 536	74 667	71 456	69 009

Almost all fields of teaching are expected to experience significant fluctuations in staffing requirements.

- ▷ The elementary teaching force, comprising the largest field, will continue to increase until 2002-2003⁶, then start to decline rapidly until it represents in 2011-2012 a little less than 86% of what it was in 2000-2001. Even though the student population will have only just started declining by 2001-2002, student-teacher ratios in Elementary Cycle One will require more elementary teachers. A similar situation will occur at the kindergarten level: new student/teacher ratios encourage an increase in teaching staff until 2001-2002 when the teaching force is expected to decrease to approximately 800 because of declining enrolments.
- At the secondary level, enrolments will increase in the different fields of teaching until 2005-2006 but will rapidly decline as of 2007-2008. In the shorter term, the new basic school regulation will have the greatest impact. In 2003-2004 there will be a need for new teachers of French: a 20% increase in instruction time for French language of instruction and a 30% increase for French as a second language. Overall, instruction time for social studies will increase by 20% in the new curriculum, but some subjects, such as moral and religious instruction, home economics, and career choice education, will disappear or have their instruction time cut back. Secondary general education will in 2003-2004 lose more than 1 300 teachers who, for the most part, will be reassigned.
- The special education and specialties fields concern all levels of instruction. They will experience an increase in the number of secondary students while the number of elementary students begins to drop. Starting in 2007-2008, the decrease will affect all levels of instruction and the total effect will result in a faster decline in the teaching force in these two fields.
- ▷ Unlike the other teaching fields, vocational training and adult education do not depend on demographic parametres and their relative weight should increase.

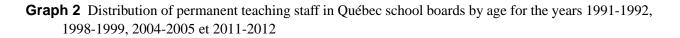
⁵Adult education teachers have already been counted in the other fields.

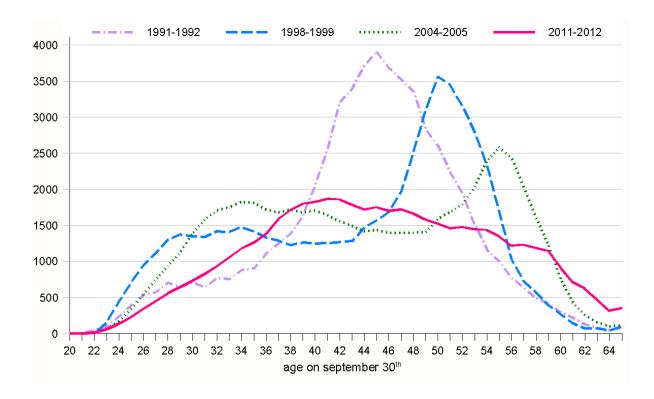
⁶28 102 elementary teachers are projected in 2002-2003, which is not illustrated in Table 3.

▷ In Table 3, private school teachers total approximately 5 800, that is, slightly more than 7% of the total teaching force. Their numbers are even greater when only secondary education is considered because they represent roughly 10% of the total teaching force.

Expected Changes

When we follow a population over a long enough period of time, many changes occur. During the 1990s the permanent teaching staff aged at a rate of 0.3 years per year. The massive departures of 1997-1998 led to a renewal (or arrivals) representing roughly 18% of the total permanent teaching staff and 45% of the part-time teaching staff, the usual rate being around 3.5% for permanent staff and 28% for part-time. As a result, the permanent staff suddenly grew younger by 2.4 years and the part-time by 1.5 years. By the end of the projection period (2011-2012), there will only just be a return to the average age of the first half of the 1990s.





Graph 2 shows the changes in the population that does 75% of the teaching, the permanent teaching staff. In 1991-1992 most of the teachers are concentrated between the ages of 39 et 52 and correspond to the massive

recruitment that occurred in the mid-1960s to the early 1970s. In 1998-1999 there were two waves of early retirements (1996 and 1997), and we note on the left of the curve the hiring of younger staff and the aging and decline of teachers recruited from the mid-1960s to the early 1970s.

The next two curves show the projections. The age of the teachers continues to fall in 2004-2005, and the area under the curve on the left side increases significantly. On the other hand, the number of teachers aged 55 and over is also increasing with the arrival of the first of the large cohorts that belonged to the RREGOP and that are expected to retire later than the RRE cohorts. In 1998-1999, while 73 % of retired teachers belonged to the RRE, this percentage will fall to 37 % in 2004-2005. In 2010-2011 the decline in hirings shows itself on the left side of the curve (we will see this when we look at recruitment) and there is a better distribution of ages among the teaching staff. There should be a noticeable increase in teachers aged 60 and over who could account for 7 % of the teaching staff, up from only 1.6% in 2000.

The profession will continue to be female-dominated. Almost all of the hiring of permanent staff is done "internally" and the proportion of women teachers is expected to increase from the current 70% to 77% in 2011-2012. Among part-time staff, the increase is expected to be less, with the proportion of women rising by only 1% to reach 71.5% in 2011-2012. The number of women teachers is growing because more men than women are leaving the profession and are being increasingly replaced by women. Among part-time teaching staff, slightly more women than men are leaving, but they are also being replaced by more women than men. Aside from vocational education where male teachers are clearly in the majority, in 2006-2007 the mathematics and science field will have a majority of women teachers, and in 2011-2012, the secondary general education field will only barely have a majority of male teachers.

The average age of teachers who become permanent (full-time) each year is roughly 34, while the average age is almost 32 for part-time staff. If we take into account the fact that a student earns a bachelor's degree in education at age 27 on average, we can observe that access to the teaching profession on a full-time or part-time basis can take five to seven years!

Recruitment Requirements

In six years, from 1995-1996 to 2000-2001, one third of the teaching staff, about 27 000 teachers, will have been replaced, 9 745 of them in 1997-1998 alone. This will have a significant draining effect on the labour market by reabsorbing the huge active pool of teachers waiting to be hired and by improving the structure per age of the teaching force.

Since the demand for teachers will decline on account of fewer students, and since attrition is not expected to increase either (the massive departures are now behind us), we must expect declining recruitment requirements. We can distinguish four different hiring periods that we can express as a proportion of the total teaching force: from 1998-1999 to 2002-2003, hirings will account for roughly 5% of the total teaching staff; from 2003-2004 to 2006-2007, the proportion will be slightly more than 3%; from 2007-2008 to 2009-2010, it will be only 2.5%; in the last two projection years, they will rise to around 3 %.

Table 4 illustrates, for un-even years only (to make the table easier to read), the changes expected with respect to recruitment requirements by teaching field.

Table	D	• .•	. C	• ,		•		•	 1

Field of Teaching	1998-99	1999-00	2001-02	2003-04	2005-06	2007-08	2009-10	2011-12
Special education	445	278	253	171	215	127	109	139
Preschool education	107	-64	397	-138	185	195	208	209
Elementary education	1 688	1 090	1 651	732	61	343	711	968
Mathematics and science	342	340	418	584	470	248	103	51
Language of instruction	227	238	294	1 211	354	200	96	70
General education	307	229	468	-1 159	465	254	115	63
Specialities	645	452	548	684	421	284	281	356
Vocational education	311	271	225	235	262	236	207	221
Adult Education ⁷	(193)	(240)	(245)	(256)	(262)	(266)	(267)	(267)
Total	4 073	2 834	4 254	2 320	2 433	1 886	1 830	2 077

Table 4 Projections of recruitment requirements in school boards and private schools, by field of teaching,1999-2000 to 2011-2012

From more than 4 250 in 2001-2002, recruitment requirements are going to decline to 1 830 in 2009-2010. Needs will fluctuate even more by field of teaching. Where Table 4 shows a negative need, this means there is a surplus in this field.

- ▷ In 1998-1999, more than 40% of recruitment requirements are at the elementary level. This proportion will decline very quickly and become almost negligible around 2005-2006 (there will even be a slight surplus in 2004-2005), but in 2009-2010 it will be the same as 10 years earlier. In 2001-2002 and 2002-2003, new student-teacher ratios in Elementary Cycle One will produce increased recruitment requirements.
- ▷ The different fields of teaching at the secondary level will benefit from rising enrolments until 2005-2006, but secondary enrolments will start to fall rapidly as of 2007-2008. In the shorter term, the new basic school regulation will have the greatest impact. As a result, in 2003-2004, roughly 800 new teachers (out of a total requirement of more than 1 200) will be needed for the instruction of French, due to an increase in its instruction time. The secondary general education field, in 2003-2004, will have a surplus of approximately 1 160 teachers who will for the most part be reassigned.
- ▷ By 2007-2008, recruitment requirements for teaching fields specific to secondary education will decline further. Over a 4-year period, fewer than 2 000 teachers will be required. This will pose a serious problem for our faculties of education that are already producing far more graduates than this!

⁷Adult education teachers have already been counted in the other fields.

Conclusion

Student enrolments will start to decline significantly by 2003-2004 and, at the same time, teacher demand will drop, producing lower recruitment requirements. It is important to remember that, in Québec, school board teachers enjoy employment security. A drop in demand therefore means a decrease in recruitment requirements as well as an increase in internal mobility for active teachers.

From 2000-2001 to 2011-2012, full-time and part-time teaching staff will decline by about 15%. Recruitment requirements, approximately 4 000 teachers in 2000-2001, will drop to under 2 000 in 2007-2008.

The time variations differ according to the eight fields of teaching. An increase in secondary enrolments until 2005-2006 will benefit the teaching staff in fields specific to secondary education but significant upheaval awaits teachers in the secondary general education field in 2003-2004. On the other hand, the special education and specialties fields, common to all levels of instruction, will suffer first the repercussions of a decline in elementary enrolments, followed by a drop in secondary enrolments.

The profession will continue to be female-dominated, and by 2010 more than 3 in 4 teachers in Québec will be women. The massive departures in 1996-1997 and 1997-1998 permitted a teacher turnover close to one in 5 full-time teachers and 45% of the part-time teaching staff. This drained the education labour market by eliminating almost completely the huge active pool of qualified individuals who were waiting to get into teaching. To avoid a repetition of the hiring difficulties Québec experienced from the mid-80s to 1997, a review of education requirements is essential.

Glossary

By-the-lesson, hourly-paid	▷ Part-time
or substitute teaching	Pension plan
▷ Employment status	▷ Permanent or full-time
▷ Field of teaching	▷ RREGOP and RRE
▷ Other employment status	▷ Specialties

- **Employment status:** Employment status defines the contract of engagement, employment security, remuneration and workload of teachers. We cannot, unfortunately, change the terminology that has been accepted for more than 30 years, in spite of its imperfections and ambiguity. In effect, terminology pertaining to status sometimes evokes the notion of duration of work, when in fact, duration of work is quite distinct from status. Permanent or full-time and part-time are the two statuses used in this study. Others exist: hourly-paid, by-the-lesson and substitute.
- Field of teaching: A field of teaching is a grouping of positions in a certain number of areas of activities or specialties. Projections are broken down for nine fields: special education, preschool education, elementary education, specialties, mathematics and science, language of instruction, other areas in general education, vocational education and adult education. The name of each field corresponds as much as possible to the name of the teacher education program that leads to a position in the field.
 Specialties at the secondary level are second language, physical education, music, and the arts. For the calculation of projections, adult education teachers have been added to the staff in each field.
- **Other employment status:** Teachers who are employed in a position that does not require legal qualification to teach are grouped under the category of other employment status.

Teacher-by-the-lesson: teachers whose contract specifies the instruction that they agree to provide students; the number of teaching hours cannot exceed one third the annual maximum workload of a full-time teacher. This status is reserved for teaching in the youth sector of school boards.

Hourly-paid teacher: teachers employed directly by the school board to teach programs in adult education or vocational education, who have no written contract and who receive an hourly wage set in conformity with the collective agreement in effect in adult education or vocational education.

Substitute teacher (fewer than 20 days): persons other than a permanent teacher, hired for a period of fewer than 20 days to replace an absent teacher. For substitute teaching for 20 consecutive days or more, the substitute teacher will be paid according to the pay scale of permanent teachers. The two statuses are reserved for teaching in the youth sector.

Part-time: (employment status) Teachers with a part-time contract of engagement. These individuals are employed for an incomplete school day, an incomplete school week or an incomplete school year. They may, however, work on a full-time basis for one complete school year when they replace a permanent teacher. Part-time teachers are remunerated according to the same pay scale as permanent teachers.

- **Pension plan:** Teachers belong primarily to two major pension plans: the **RRE** and the **RREGOP**. The Régime de retraite des enseignants (RRE) concerns only permanent teachers hired before July 1, 1973. This plan offers retirement conditions that differ according to gender, and it allows women to retire sooner than men. A little bit more than 17% of permanent teachers contributed to the RRE in 1998-99. To the RRE, we added all other teachers who are members of a pension plan other than the RREGOP, that is, approximately 10 teachers primarily from the Régime de retraite des fonctionnaires (RRF). The Régime de retraite des employés du gouvernement et des organismes publics (RREGOP) is the pension plan of all employees hired after July 1, 1973, as well as of all those hired before this date but who transferred their rights during a transitional period in the mid-1970s. The RREGOP does not offer different retirement conditions for men and women, and it does not allow early retirement without financial penalty before age 60.
- **Permanent or full-time:** (employment status) Teachers who, being neither by-the-lesson, nor part-time, have a written contract of engagement in accordance with Appendix III-c) of the collective agreements of the Centrale de l'enseignement du Québec (CEQ), the Provincial Association of Catholic Teachers (PACT) and the Provincial Association of Protestant Teachers (PAPT). Except in the cases of availability or surplus, these teachers are employed on a full-time basis. After two years of service, teachers become permanent; however, approximately 30 teachers who are not legally qualified to teach are hired on a full-time basis during the school year. Because they occupy positions of permanent teachers, they have been included here with permanent staff.