Quebec's 1992 Teacher Training Program Reform: Assessing an attempt to regulate the supply of newly qualified teachers and to improve access to the profession

Jean-Claude Bousquet and Renaud Martel Statistics and Quantitative Studies Branch, Quebec Ministry of Education

prepared for the

2001 Pan-Canadian Research Education Program Symposium Teacher and Educator Training: Current Trends and Future Orientations

May 22-23, 2001 Université Laval, Quebec City

Translation

Abstract

The Quebec teacher training program reform experiment involved measures to match new teacher supply and market needs. From a situation in 1995 where the rate of access to employment was poor and declining, the reform brought about an improvement of access to jobs for recent graduates. While there is a link between the rate of access to employment and the ratio between qualified candidates and hiring, that link is somewhat distorted by a certain mismatch between pre-service training and job assignments, especially in mathematics where many new special education graduates end up working. New graduates who do not quickly accede to substantial teaching jobs do not remain in the profession for long. Less than full-time positions, especially occasional supply teaching, are not real jobs that candidates can use as stepping-stones. Indeed, the recent early signs of scarcity have already led to improvements in conditions in some of these positions.

The steps taken to manage the supply have already been effective in reducing the teacher dropout rate, but they must be formalized in a system involving the various stakeholders, in order to be sustainable and adapt to changes in the prevailing situation.

1 PURPOSE OF PRESENTATION: TO EXAMINE AN ATTEMPT TO REGULATE MARKET ACCESS TO NEW TEACHING JOBS

This study has two objectives:

- 1. to present the results of Quebec's experiment in regulating access to the teacher job market;
- 2. based on that experiment, to examine ways to address two issues of sensitivity to all Canadian provinces over the next decade¹: how to train and retain a sufficient number of teachers.

In all provinces, an unusually high proportion of teachers will be retiring between 2000 and 2010. Will enough teachers be trained to take up the available positions? And if so, given that a high proportion of new teachers leaves the profession early in their career, can these new teachers be retained in the profession? As well, will there be enough qualified teachers in specific subjects, given the increasing demand for better quality teaching? How can we improve the teacher retention rate, especially in disciplines that are experiencing scarcity?

These issues are broadly addressed in studies of supply and demand via the proxy of demand for teachers. The issue of teacher supply has elicited less interest from researchers, perhaps because abundant supply has become the norm in the North American context. Most specialists simply hope that the current situation will continue and offer rote solutions such as proposals to increase salaries in order to enhance the attractiveness of the profession. In the 1990s, however, Quebec undertook a bold experiment to regulate supply in order to improve access to the profession for newly qualified teachers. As part of that policy, a fairly comprehensive database on teacher resources was created. This database is beginning to reflect the effects of Quebec's experiment on the supply and retention of new teachers.

2 SUPPLY REGULATION POLICY

2.1 QUEBEC CONTEXT

1

Quebec has a **chronic teacher oversupply.** Between 1975 and 1985, school boards had to deal with several thousand teachers more than needed. Regular teachers obtained job security in 1975, just before student enrolment dropped about 30%. Although graduation rates were decreasing², universities were producing too many unneeded qualified teachers. Hiring started picking up from 1986 onwards, and especially in the early 1990s, but many more new teachers graduated every year than were needed.

2.2 THE SUPPLY MANAGEMENT EXPERIMENT

This situation was harming the profession's image and hamstringing any attempt to reform teacher training. It was thus decided to link reform to access to employment. According to one of the architects of the reform³: "The action plan on renewing and raising the profile of the teaching profession *Faire l'école aujourd'hui et demain: un défi de maître⁴* already set out concerns with employment conditions for the teaching profession. In his introduction, the Minister stated: 'Managing career profiles necessarily involves reducing employment instability'.

"One of the consequences of the existing career profiles is that new teachers must generally begin their career working part-time in unstable situations. In addition, new teachers enjoy few job opportunities, since the evergrowing number of teacher candidates from university programs has continually swelled the already sizeable pool of qualified job-seekers over the past several years."

See section 2, *Demographic Profile of the Teaching Profession*, *Report of the Annual Conference, October 14-16*, 2000, Canadian Teachers Federation/Fédération canadienne des enseignantes et des enseignants, January 2001, 37 p.

 ² It is estimated that fewer than a third of 1981 graduates obtained a regular position (see table in Appendix 1). See also Joséphine Mukamurera's doctoral thesis and research dealing with the career profiles of new teachers and their personal and professional implications.

³ Jacques Lamarche in *Presentation* section of the green paper *La régulation des admissions aux nouveaux* programmes de formation des maîtres, (Regulation of Admissions to New Teacher Training Programs), Quebec Ministry of Education, 1995, 183 p.

⁴ *Faire l'école aujourd'hui et demain : un défi de maître,* (Building Today's and Tomorrow's School: A Major Challenge), Quebec Ministry of Education, 1992, 21 p

The 1992 reform created a single access point to the profession: the new 4-year, 120-credit professional bachelor's degree. The reform was implemented in the fall of 1994 for secondary level generalist teachers; in the fall of 1995 for generalists at the early childhood and elementary levels, in the fall of 1997 for special education and in 1998 for specialties (physical education, arts and second languages).

3 THE EFFECTS OF REFORM ON THE NUMBER OF NEWLY QUALIFIED TEACHERS

3.1 COMPLIANCE BY UNIVERSITIES WITH ADMISSION QUOTAS

Broadly speaking, universities have complied with admission quotas (see Table 1). In 2000, the ratio of new enrolments to quotas is 78% for the francophone sector and 65% for the anglophone sector⁵.

3.2 THE EFFECTS OF THE ABOLITION OF INDIRECT ACCESS POINTS TO THE TEACHING PROFESSION

The first effect of the reform on the output of new teachers was the winding-down, from 1995, of admissions to most educational psychology certificate programs that were used as indirect access points into the profession.

	Quota	Number	of new e	nrolments	Ratio 2000
		1998-1999	1999-	2000-	enrolments/quotas
			2000	2001	1
	(1)	(2)	(3)	(4)	(5)=100×(4)/(1)
French language programs*					
Special education	750	661	554	520	69
Early childhood and elementary	2000	1669	1716	1724	86
Bac en enseignement secondaire (BES)	1516	1256	1245	1101	73
Specialties	1045	836	911	783	75
- ESL	445	307	297	213	48
- Third language **		6	13	11	
- Physical education	300	295	352	324	108
- Arts	300	228	249	235	78
Total	5311	4422	4426	4128	78
English language programs					
Special education	70	0	0	0	0
Early childhood and elementary	235	195	206	192	82
Bac en enseignement secondaire (BES)	165	106	118	120	73
Specialties	260	171	163	161	62
- FSL, immersion and settlement*	175	99	106	112	64
- Physical education	40	57	42	38	95
- Arts**	45	15	15	11	24
Total	730	472	487	473	65

Source: Enrolment records from fall 1994 to fall 2000; Crepuq 28/10/2000, 10 pages

* The quota and new enrolments for linguistic orientation and support programs, provided by the French language education sector, are included under *FSL*, *immersion and orientation* as part of the English language education sectors.

* * The third language quota is subsumed under the second language quota.

In 1993, between 39 and 80% of newly qualified teachers had a bachelor's degree (see Table 2), while the corresponding proportion in 1999 was 79 to 88%. In addition, the number of qualified candidates has decreased by at least 20% since 1993.⁶. The reform also brought about more uniformity in the age of future teachers. Most

⁵ It is not yet known how many new students joined programs part-way through, but their number is thought to be lower than the quotas of new candidates.

⁶ The number of qualified candidates peaked in 1995, see Table 3.1.

candidates who qualified via the certificate program were in their early thirties, whereas most new candidates will now be in their mid-twenties.

3.2.1 Context of evolving market conditions for all disciplines

For an even closer reading of the outcomes of the Quebec reform experiment, the annual output of teachers must be looked at in the context of job opportunities. Between 1991 and 1995, the number of qualified candidates rose from 5500 to 7500 (see Table 3.1). This increase appears unrelated to market needs, as shown by the curve of the candidate-job ratio which rose from 143% in 1991 to 204% in 1995; whereas there were 1.4 candidates for each job in 1991, there were 2 candidates for each position by 1995.

Table 2: Share of access points to the profession in 1993 and 1999 per program													
Area of	1993-19	94 Gradua	tes		1999 Gr	aduates							
qualification	Number	%	%	%	Number	%	%	%	Ratio				
	s	bachelor'	certificate	temporary	s	bachelor	certificat	temporary	1999/1993				
		S		credentials		's	e	credentials	enrolment				
Preschool and	lelement	ary											
Enrolment	1771	80%	13%	7%	1409	88%	6%	6%	80%				
Average age 25 24 31 32 25 24 31 Mathematics and solution 31 32 25 24 34 31													
Mathematics and science													
Enrolment	631	57%	34%	9%	478	87%	3%	10%	76%				
Average age	28	24	32	33	26	24	40	36					
Language of i	nstruction	1											
Enrolment	547	62%	31%	7%	398	86%	6%	9%	73%				
Average age	27	24	33	34	26	24	31	38					
Other seconda	ary progra	ams											
Enrolment	nrolment 733 39% 51% 10% 344 79% 16% 5% 47%												
Average age 29 25 31 32 27 25 35 36													
Note: Proportions of bachelor's degrees and certificates are estimated.													
Source: Sourc	e: Side, p	anorama 3	310, versio	n 2000, DSE	EQ, MEQ								

Between 1996 and 1999, the average annual output decreased to 4,500 qualified candidates. That output was slightly lower than employment requirements, yielding a candidate-job ratio of 91% for that period. The new program did lead to much healthier job market conditions. Indeed, if 1993 conditions had continued to prevail, 7,900 new candidates would have come to the market between 1995 and 1999; and if peak 1995 conditions had continued to prevail, 11,600 new candidates would have come to the market between that year and 1999!

3.2.2 Context of changes in market conditions for each area

Annual variations in specific areas appear to be amplified (see Tables 3.1, 3.2, 3.3). Nonetheless, it remains overall that the Quebec reforms put an end to the ever-growing gap between the output of qualified candidates and annual requirements during the first half of the 1990s.

In terms of **preschool and elementary**, a surplus in the early 1990s was replaced overnight by a scarcity situation. During the earlier period, the candidate-job ratio was 188%; that ratio fell to 50% during the latter period. The 1997-1998 school year was exceptional in three respects. On the one hand, the number of qualified candidates graduating that year was very low since the transition from 3- to 4-year bachelor's degrees led to the loss of an entire graduating class; and on the other hand, the level of hiring that year was exceptional. In addition to early retirement packages, some 2000 jobs were created following the advent of full-day preschool for 5-year-olds. However, a surplus appears to be on the way again, according to 1998 figures. This trend is of concern, given the impending decrease in the birth rate⁷.

7

See presentation by R. Ouellette.

Table 3.1 -: New candidates, jobs and candidate-job ratios										
	All training pr	ograms		Early childhoo	od and elemen	tary				
Candidate cohort	New	Jobs	Candidate-	New	Jobs	Candidate-				
(academic year)	candidates		job ratio	candidates		job ratio				
1991-1992	5482	3825	143%	1342	1129	119%				
1992-1993	6335	3466	183%	1831	641	286%				
1993-1994	6522	3347	195%	1771	512	346%				
1994-1995	6373	3496	182%	1756	985	178%				
1995-1996	7455	3654	204%	2012	1370	147%				
Total 1991-95	32167	17788	181%	8712	4637	188%				
1996-1997	5479	3351	164%	1842	1497	123%				
1997-1998	4412	9684	46%	609	5884	10%				
1998-1999	3811	4073	94%	1194	1795	67%				
1999-2000 ^p	4500	2835	159%	1497	1026	146%				
Total 1996-99	18202	19943	91%	5142	10202	50%				
Total 1991-1999	50369	37731	133%	13854	14839	93%				
Source: Side panor	ama 300 and 4	30 version 20	00, DSEQ, M	EQ						

In mathematics (see Table 3.2) there continues to be a chronic scarcity of candidates, fluctuating from about 33% during the earlier period to 25% during the latter period. However, even in mathematics, there was a trend to a surplus situation in 1995! From the point of view of new candidates, such a job market appears to be ideal.

In language of instruction, the candidate-job ratio shows a surplus of 38% during the earlier period, and 20% during the latter.

In social studies and special education (see Table 3.3), a major surplus of candidates can be observed. During the earlier period, the oversupply was such that there were 3 candidates per job in social studies and 2 per job in special education. The corrective effect of reforms appears more clearly in special education than in social studies. In social studies, output seems to be moving again, unrelated to market needs⁸.

Table 3.2 - Entry of new candidates in the profession from 1991 to 1999 and candidate-job ratios										
	Mathematics			Language of i	nstruction					
Candidate cohort	New	Jobs	Candidate-	New	Jobs	Candidate-				
(academic year)	candidates		job ratio	candidates		job ratio				
1991-1992	181	455	40%	450	521	86%				
1992-1993	209	475	44%	513	435	118%				
1993-1994	226	444	51%	586	401	146%				
1994-1995	318	285	112%	631	383	165%				
1995-1996	378	324	117%	742	378	196%				
Total 1991-95	1312	1983	66%	2922	2118	138%				
1996-1997 ¹	171	257	67%	311	203	153%				
1997-1998	246	539	46%	401	527	61%				
1998-1999	200	226	88%	322	227	142%				
1999-2000 ^p	314	224	140%	398	238	167%				
Total 1996-99	931	1246	75%	1432	1195	120%				
Total (1991-1999)	2243	3229	69%	4354	3313	131%				
Source: Side papor	ama 300 and 4	30 version 20	00 DSFO M	FO						

Source: Side panorama 300 and 430 version 2000, DSEQ, MEQ 1. The transition from 3- to 4-year bachelor's degrees led to the loss of a graduating class in 1996-97 for general education secondary programs.

8

The problem that exists in social studies is probably derived from the fact that secondary admission quotas were settled by system level, with individual departments left to split the allocation within each level. The issue will be revisited as part of an upcoming review of quotas.

new candidate	es in the profes	ssion from 199	1 to 1999 and	candidate-job	ratios
Social studies			Special edu	cation	
New	Jobs	Candidate-	New	Jobs	Candidate-
candidates		job ratio	candidates		job ratio
309	182	170%	602	235	256%
384	188	204%	621	433	143%
465	183	254%	798	178	448%
539	69	781%	528	480	110%
609	120	508%	847	189	448%
2306	742	311%	3396	1515	224%
301	93	324%	767	251	306%
254	244	104%	742	422	176%
258	89	290%	448	445	101%
265	68	390%	305	278	110%
1078	494	218%	2262	1396	162%
3384	1236	274%	5658	2911	194%
	new candidate Social studies New candidates 309 384 465 539 609 2306 301 254 258 265 1078 3384	new candidates in the profes Social studies Jobs New Jobs andidates 182 309 182 384 188 465 183 539 69 609 120 2306 742 301 93 254 244 258 89 265 68 1078 494 3384 1236	new candidates in the profession from 199 Social studies New Jobs Candidate-job ratio 309 182 170% 384 188 204% 465 183 254% 539 69 781% 609 120 508% 2306 742 311% 301 93 324% 254 244 104% 258 89 290% 265 68 390% 1078 494 218% 3384 1236 274%	new candidates in the profession from 1991 to 1999 and Special educed Special educed Special educed job ratioSpecial educed New candidatesNewJobsCandidate- job ratioNew candidates309182170%602384188204%621465183254%79853969781%528609120508%8472306742311%339630193324%767254244104%74225889290%44826568390%3051078494218%226233841236274%5658	new candidates in the profession from 1991 to 1999 and candidate-jobSocial studiesSpecial educationNewJobsCandidate- job ratioNew309182170% 602 235384188204% 621 433465183254%79817853969781%528480609120508%8471892306742311%3396151530193324%767251254244104%74242225889290%44844526568390%3052781078494218%2262139633841236274%56582911

Source: Side panorama 300 and 430 version 2000, DSEQ, MEQ

1. The transition from 3 to 4-year bachelor's degrees led to the loss of a graduating class in 1996-97 for general education secondary programs (including social studies) and in 1999-2000, for special education.

4 ACCESS TO JOBS FOR YOUNG TEACHERS SINCE REFORM

We tested the assumption that a given crop of graduates would be retained in the profession to a greater extent if it had access quickly to attractive jobs.

4.1 PARAMETERS OF STUDY

New graduates are not alone in seeking new available jobs. Earlier graduates who are not yet employed or unemployed compete for the same jobs. To take that fact into account, we reviewed variations in employment rates for several graduating classes within any given period.

In addition, not all jobs are equal. We have distinguished between "full-time" jobs, which include regular employment (leading to job security) and limited-term positions known in Quebec "as part-time jobs" (see Table in Appendix 7), whose incumbents must be legally qualified under the Quebec Education Act. In reality they are full-time on average (see last column in Appendix Table 7) and therefore provide a reasonable source of income. That's not generally the case for other types of teaching jobs such as occasional supply teaching and various types of part-time employment (such as hourly paid or occasional supply teaching for 20 days or more), which are at best second jobs. The rate of full-time jobs shows the proportion of a graduating class occupying full-time positions. The proportion of part-time positions corresponds to the proportion of graduates holding part-time jobs. The third rate is the sum of the other two.

Tables 1, 2, 3, 4, 5 and 6 of the Appendix show the rate of access to employment during the 5-year between 1989 and 1998, for eight cohorts of new teachers, spread between 1981 and 1998.

4.2 MAJOR FINDINGS

The overall rate of employment peaks during the first two or three years and decreases thereafter. Part-time employment rates are generally highest in the first year and decrease steadily thereafter as part-time teachers obtain full-time positions or drop out of the profession.

The rate of full-time employment increases gradually and then reaches a plateau and in some cases declines. The growth curve for full-time employment is shortest when the initial rate of employment is highest, i.e., in mathematics. Some teachers do move through part-time and full-time employment only to drop out. Only that

small proportion of teachers might be affected by traditional proposals to improve retention.

An exceptional event, such as the 1997 ECE and elementary hiring wave, has an impact on the employment rates for earlier graduating classes all the way back to 1992, but its effects cannot be traced back to the 1989 class. In other words, the impact is proportionally larger for more recent cohorts.

Over time, we can generally observe an increase in the overall employment rate and the full-time employment rate in favour of more recent cohorts. The 1989 cohort shows a total employment of 58% and the 1998 cohort 72%. The situation in the early 1990s favoured the 1989 and 1992 cohorts over earlier classes. However, the explosion of the number of social studies graduates in 1995 brought about a fall in the employment rate back to the level of the early 1980s.

The 1995, 1997 and 1998 cohorts enjoyed the full benefit of improved hiring after 1995. These findings confirm the hypothesis that the retention rate in a given graduating class appears to be related to the state of the market during the first few years⁹, as indicated by the ratio of qualified available candidates from the two or three last cohorts to those hired.

4.3 NARROWING THE DISCIPLINE GAPS; THE SPECIAL CASE OF SPECIAL EDUCATION

Gaps in employment rates generally reflect different situations as shown by the ratio of qualified candidates to hiring. The staggering of employment rates over time in a given discipline, as well as the gap between disciplines, clearly reflect the situation during the current year and the three previous years. However, that impact is somewhat attenuated. For example, in spite of a chronic shortage of mathematics teachers, the rate of employment in that discipline does not exceed 71%. Even ECE and elementary generalists do not rise above those rates in 1997 and 1998. However, the peak for social studies, a discipline in a constant state of saturation, does nonetheless reach 43%. How can that narrowing of discipline gaps be explained?

Figures for **special education** (see Table 6 in the Appendix) trace a remarkable exception to the relationship between the employment rate and the ratio of qualified candidates to those hired during 1989-1998. This may be the starting point for an explanation. Employment rates for that discipline are higher than those in mathematics. In 1998, full-time employment rates for all graduating classes between 1989 and 1997 exceeded 70%. Indeed, qualified candidates in special education graduating from 1991 to 1997 hold approximately 900 full-time positions more than there are new jobs available in that discipline. This raises the issue of the match between job assignments and initial qualification.

4.4 Relationship between JOB assignment and qualification in mathematics

A review of the match between job assignment and initial qualification in mathematics shows that in 1994, 38% of young teachers had pre-service training in mathematics, 18% in science and 44% in another discipline (see Table 4). Among other disciplines, special education is by far the largest, followed by physical education, ECE and elementary, and social studies. In 1998, despite the renewal opportunities opened by large-scale departures in 1997, the proportion of mathematics teachers had but slightly increased.

TABLE 4 – DISTRIBUTION OF STAFF	AND TEACHING TIME BY TYPE OF
QUALIFICATION IN MATHEMATICS	
September 1994, teachers under 36	September 1998, teachers under 40

September	1994, te	achers und	er 36		September 1998, teachers under 40								
	Type of	qualificati	ion by perc	centage:	Type of qua	Type of qualification by percentage:							
	mathe-	other	other	unknown	mathemati	other field	other	unknown					
	matics	field 13	subjects		cs	13 subjects	subjects						
		subjects											
Number	38%	18%	44%	0%	44%	16%	38%	1%					
H/week	46%	18%	36%	0%	51%	16%	32%	1%					
1. Includes	only tea	chers for w	hom math	ematics is	the main sub	oject.							
2. Field 13 includes teachers of mathematics or science.													
3. The Min	3. The Ministry's file includes comprehensive data on teacher qualification only since 1980.												

Source: Table 4.1, Study report, *Les enseignantes et les enseignants en mathématiques et en science*, J.-Claude Bousquet and Renaud Martel, Quebec Ministry of Education, February 25, 2000, 25 p.

At first sight, this phenomenon cannot be explained by the specific characteristics of special education students¹⁰, nor by the excellence of training¹¹. Perhaps the solution lies in job assignment rules.

⁹ Recall lists certainly have an impact by encouraging candidates to remain in the profession longer (see comments on recall lists in the following section).

¹⁰ According to Crepuq's admission statistics, the average R score of new students in special education (25 approximately) is lower by 2 points than those enrolling in secondary or ECE/elementary programs, barely higher to

4.5 JOB ASSIGNMENT RULES

Since 1986, access to contract employment has gradually become the preserve of priority candidates on the recall lists. Priority is related to the length of service in the discipline during a given period. Since the 1996 collective agreement, the recall lists are also a prerequisite for access to regular employment.

An employer who does not have an available qualified candidate can fill a teaching position in a discipline by using post-qualified candidates¹² with experience teaching the discipline. Thus, since special education teachers are trained to teach the two major subjects, language of instruction and mathematics, both for elementary and for secondary levels, they have broader opportunities to acquire experience outside their field. But this does not explain that teachers from areas other than special education also end up migrating outside their discipline!

4.5.1 Situation of teachers holding non-qualified positions

A second finding is that contrary to a widespread belief, teachers from a given graduating class who do not find employment do not remain available for long. Why? Let us examine conditions of access to employment. Unless the recall lists are very short, young qualified teachers must begin their career, fresh out of university, by taking up supply-teaching work. Supplemental positions available in general education (adult education excluded) numbered 13,100 in 1998-1999 (see Appendix Table 7). Occasional supply teachers are the largest group with 9,600 positions. But can we still talk of "positions" when 46% of supply teachers only work the equivalent of 5% of a full-time position and 39% between 5 and 24% of FTE? Only 15% or 1,500 occasional supply teachers work more than 25% FTE! The other 3,500 teachers holding supplemental positions work on average one third FTE of "per class" teachers and 44% FTE of "occasional supply teachers over 20 days". The latter two groups are the lucky ones since they get more substantial jobs, with remuneration very close to that received by "full-time" teachers and above all, that provide access to the recall list. We can therefore consider that about 5,000 supplemental positions could constitute a way-station pending full-time employment. Some of these positions are indeed probably filled by long-time teachers who do not seek further advancement. There will thus remain some 3,000 to 4,000 positions for beginners.

In a saturated, entirely unregulated market, the requirement to go through a period of occasional supply teaching before being able to obtain positions that give access to recall lists is the weak point in the access system. Indeed, how can we hope to attract good, qualified students and retain high-level qualified teachers if access to reasonable jobs resembles a lottery and requires putting in many years in truly precarious conditions¹³?

5 CONCLUSIONS

The Quebec experience shows that a certain degree of regulation of supply is possible, and that it is an economic and effective means of increasing retention rates and thereby enhancing the value of the profession in the eyes of potential candidates.

For this experiment to grow and continue, the management of employment opportunities must be formalized, just as the management of programs has become. Between 1994 and 1997, there existed a provincial round table that included representatives of employers, unions, and faculties of education and was coordinated by the Ministry of Education. Regulation of supply requires extensive cooperation between stakeholders and an ongoing effort to adjust the various factors that influence the employment market. The architects of that reform had understood this, but they unfortunately left the profession as part of the 1997 wave of retirements. In the absence of a forum to discuss the issues, the survival of this experiment is anything but assured.

those of specialists and higher by 2.5 points than those of candidates in certificate programs. In addition, the proportion of students holding a college science teaching diploma is 7%.

¹¹ The accrediting body, Comité d'agrément des programmes de formation à l'enseignement (CAPFE), has stated that new programs cannot be fully accredited given the major differences in training between various universities. In addition, a number of programs do not meet all ministerial requirements. p 5-6, *Rapport annuel 1999-2000*, CAPFE, Government of Quebec, October 2000, 19p.

¹² According to the collective agreement, a teacher who is not legally qualified to teach a discipline can obtain recognition of her or his "capacity" to do so (hence the name of "capacitaire"). To obtain such recognition, a teacher must either have taught the discipline for a full year full-time over the past 5 years, or have obtained 15 specialization credits in the discipline.

¹³ Supply teachers are often assigned the most difficult classes in a school or neighbourhood, where the regular teachers need the most time off.

We need to continue the search for solutions to the problems that this study has approached only superficially. How can we improve the match between training and employment? What is the overall desirable level of quotas, given on the one hand the risk of scarcity and on the other hand the social and professional cost of high drop-out rates by beginners? Should competitive access be instituted for a number of regular positions in order to attract or retain high-level students? More generally speaking, how can we encourage local initiatives that have already been taken in some places and some disciplines to manage the "relative scarcity" of teachers? Table 1: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for **all training programs**, by type of employment

type of empl	oyment														
Class of	1989-19	90		1992-1993			1995-1996			1997-199	98		1998-1999		
	Rate of e	employme	ent in %:	Rate of employment in %:			Rate of employment in %			Rate of employment in %:			Rate of employment in %:		
							:								
Graduating	full	supply	total	full	supply	total	full	supply	total	Full	supply	total	full	supply	total
1998-1999													28	44	72
1997-1998										29	38	67	55	17	72
1996-1997										52	20	72	58	13	71
1995-1996							16	35	51	. 54	16	70	56	11	67
1992-1993				28	34	63	47	16	63	54	9	63	54	7	62
1989-1990	23	35	58	50	12	61	49	8	57	53	5	58	53	5	58
1985-1986	37	13	51	42	8	51	42	6	49) 44	5	49	45	4	49
1981-1982	34	8	42	37	6	43	37	5	42	2 39	4	42	. 39	4	43
Annual ratio	qualified	hiring:				183%			204%			46%			94%
Source: Side	de version 2000: panorama 310 DSEQ, Ministère de l'						cation an	d Table 3	.2	•			-		

Table 2: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for **ECE and elementary** generalists, by type of employment

Class of	1989-19	90		1992-199	3		1995-19	96		1997-199	98		1998-1999		
	Rate of e	employme	ent in %:	Rate of en	nploymer	nt in %:	Rate of employment in %			Rate of employment in %:			Rate of	employm	ent in %:
							:								
Graduating	full	supply	total	full	supply	total	full	supply	total	full	supply	total	full	supply	total
1998-1999													15	65	80
1997-1998										29	41	70	52	20	72
1996-1997										62	20	82	70	12	82
1995-1996							10	47	57	65	15	80	70	10	80
1992-1993				15	44	59	43	21	64	- 58	9	67	61	7	68
1989-1990	15	46	61	48	15	63	49	10	59	58	5	63	58	6	64
1985-1986	42	. 15	57	48	11	59	49	8	57	54	6	59	54	5	59
1981-1982	40	10	51	44	7	51	46	5	51	49	4	52	46	4	50
Annual ratio	qualified	⊢hiring:				286%			147%			10%			67%
Source: Side	Side version 2000: panorama 310 DSEQ, Ministère de l'É						cation an	d Table 3	.2						

Table 3: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for **mathematics**, by type of employment

· · · ·															
Class of	1989-19	90		1992-199	3		1995-19	96		1997-199	98		1998-1999		
	Rate of e	employme	ent in %:	Rate of en	nploymer	nt in %:	Rate of employment in %			Rate of e	mployme	nt in %:	Rate of	employm	ent in %:
							:								
Graduating	full	supply	total	full	supply	total	full	supply	total	full	supply	total	full	supply	total
1998-1999													40	34	74
1997-1998										31	42	74	- 68	7	74
1996-1997										59	13	72	61	6	67
1995-1996							30	21	52	2 71	7	78	66	5	71
1992-1993				43	31	73	66	7	72	64	4	68	62	3	66
1989-1990	40	18	58	58	6	64	- 66	1	67	60	3	62	. 60	1	61
1985-1986	39	16	55	52	5	57	48	9	57	50	5	55	45	7	52
1981-1982	14	10	24	· 17	3	21	14	3	17	14	0	14	- 14	· 0	14
Annual ratio	qualified	⊢hiring:				44%			117%			46%			88%
Source: Side	e version 2	2000: pan	orama 31	10 DSEQ,	Ministère	e de l'Édu	cation an	d Table 3	.2						

Table 4: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for **language of instruction**, by type of employment

Class of	1989-19	90		1992-199	3		1995-1996			1997-199	98		1998-1999		
	Rate of e	employme	ent in %:	Rate of er	nploymer	nt in %:	Rate of employment in %			Rate of employment in %:			Rate of employment in %:		
							:								
Graduating	full	Supply	total	full	supply	total	full	supply	total	full	supply	total	full	supply	total
1998-1999													25	40	65
1997-1998										10	44	54	44	18	62
1996-1997										41	21	62	43	18	61
1995-1996							14	30	43	50	18	68	51	13	64
1992-1993				26	27	53	46	9	55	43	8	50	46	6	52
1989-1990	22	24	46	49	7	56	45	8	53	47	6	52	46	6	52
1985-1986	28	14	41	32	8	40	34	5	39	34	5	39	36	4	40
1981-1982	21	10	30	29	3	32	23	7	30	25	3	28	26	3	29
Annual ratio	al ratio qualified-hiring: 118								196%			61%			142%
Source: Side	Side version 2000: panorama 310 DSEQ, Ministère de l'É						cation an	d Table 3	.2						

Table 5: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for social studies by type of employment

• mpro j mone																
Class of	1989-19	90		1992-1993			1995-19	96		1997-199	98		1998-19	199		
	Rate of e	employme	ent in %:	Rate of employment in %:			Rate of o	Rate of employment in %			mployme	nt in %:	Rate of	Rate of employment in %:		
			-			-	:									
Graduating	full	supply	total	full	supply	total	full	supply	total	full	supply	total	full	supply	total	
1998-1999													16	51	68	
1997-1998										16	41	57	46	24	70	
1996-1997										25	32	57	37	18	55	
1995-1996							9	26	35	37	23	61	43	15	58	
1992-1993				19	27	47	35	15	50	44	10	54	42	9	52	
1989-1990	32	. 17	49	43	6	49	41	6	46	i 44	5	48	42	. 4	46	
1985-1986	27	12	39	27	6	33	3 30	7	37	29	7	36	5 29	5	34	
1981-1982	31	5	35	33	2	36	5 32	4	36	32	4	36	5 31	4	35	
Annual ratio	o qualified	hiring:				204%			508%			104%			290%	
Source: Side	e version 2	2000: pan	orama 31	10 DSEQ,	Ministère	de l'Édu	cation an	d Table 3	.2							

Table 6: Rate of access to employment in school boards, 1989 to 1998, for selected cohorts of newly qualified teachers for **special education**, by type of employment

Class of	ass of 1989-1990 Rate of employment in %:			1992-1993 Rate of employment in %:			1995-1996 Rate of employment in %			1997-1998 Rate of employment in %:			1998-1999Rate of employment in %:		
							:								
Graduating	full	supply	total	full	supply	total	full	supply	total	full	supply	total	full	supply	total
1998-1999													42	. 39	81
1997-1998										28	53	81	. 71	16	87
1996-1997										66	20	85	5 73	11	84
1995-1996							16	5 39	55	5 70	12	82	2 72	. 9	81
1992-1993				32	. 42	73	61	15	76	5 72	. 7	78	8 72	. 5	78
1989-1990	25	48	73	72	9	81	70	7	77	74 /	5	79	73	5	78
1985-1986	54	- 13	66	62	8	70	60	6	66	63	5	67	63	4	67
1981-1982	48	6	54	51	4	56	5 51	3	54	53	3	55	5 52	. 3	55
Annual ratio qualified-hiring:			143%			448%			176%			101%			
Source: Side	version 2	2000: pan	orama 31	10 DSEQ,	Ministère	de l'Édu	cation an	d Table 3	.2						

Main status:	Number	Remuneration by percentage of full-time for all types of employment held ¹							
		95 % and	75 to 94 %	50 to 74%	25 to 49%	5 to 25%	under 5%	in %	
		above							
Regular or full-time	56934	78,3	12,1	4,6	2,2	0,5	2,3	92,5	
Part-time	16283	35,4	29,5	24,6	9	1,4	0,1	82,2	
Per class	2290	1,5	3,9	18	33,9	33,1	9,5	33,3	
Hourly rate	5254	12,6	5,9	11,2	17,6	31,4	21,4	39,3	
Supply 20 days and +	1220	1,6	6,5	30,5	40,7	19,7	1,1	44,2	
Occasional supply	9634	0	0,2	3,1	12,2	38,9	45,5	11,9	

Table 7: Types of school board teaching positions, by status, 1998-1999

Source: Side version 2000: panorama 170 for types of employment and 130 for numbers, work in progress, DSEQ, Ministère de l'Éducation 1. Proportions of FTE remuneration were obtained by totalling remuneration from various sources for teachers whose main function within a school board was teaching, based on their highest status. The gap is particularly significant for the part-time, per class and supply 20 days and more categories, who work respectively 15%, 20% and 19% FTE in occasional supply teaching. Staff whose highest FTE was in an employment category other than teaching were ignored.

2. This status is reserved for vocational and adult general education teachers.