

**ENROLMENT RETENTION/ATTRITION RATES IN FRENCH IMMERSION :
PROBLEMS WITH RESULTS REPORTED IN THE FSL REVIEW**

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The FSL Review presented by commissioners Jim Croll and Patricia Lee is problematic in many respects with regard to how data are presented and analyzed. The most obvious of these problems is manifested with respect to the retention and attrition rates that are calculated incorrectly.

In order to calculate retention/attrition rates, one must follow the same cohort group from the year of entry into a program until graduation. For example, to know the rate for Late French Immersion students in grade 12 in 2006-07, one cannot use the number of students enrolled in LFI in grade 6 in the same year. One must go back to the year 2000 when this same Grade 12 cohort group began their program in Grade 6, and use the enrolment numbers for those two years to determine retention/attrition.

The retention/attrition rates calculated in the FSL Report are based on cohort groups in the same year (for example, the number of students enrolled in grade 6 in 2006 compared to the number of students enrolled in grade 12 in the same year.) This kind of calculation does not reflect retention/attrition.

We want to make it clear that we are not claiming that the figures used are not actual Department of Education figures or that the calculations are deliberately misleading. We are simply pointing out that the calculations were done using figures taken from cohort groups within the same year rather than by following the same cohort from its entry year to graduation, as is required to calculate retention/attrition.

Consequently, we have recalculated the retention/attrition rates using the same cohort group. The differences are substantial. Since the Commissioners relied on retention/attrition rates as a basis for program success, this is an extremely important discrepancy.

Following are some specific examples of these discrepancies.

**1. AVERAGE DECLINES IN FSL EARLY IMMERSION ENROLMENTS FROM
GRADE 1 TO GRADE 5 BETWEEN SEPT 2002 AND SEPT 2006**



STATISTICS CALCULATED USING DATA FROM TWO DIFFERENT COHORTS : GR1 1997 AND GR 5 1997 REPORT (TABLE 6)		STATISTICS RECALCULATED USING THE DATA FOLLOWING THE SAME COHORT : GR1 1997 AND GR 5 2001	
205/311	-34.1%	673/911	-26.2%

TABLE 6 on page 41 has calculation of % change calculated vertically; that is, using data from the same year. Dr. Croll has attempted to explain the calculation by saying that these tables were matrices and one needs to calculate diagonally. It is unfortunate he did not follow his own advice. The calculations in the Report are **not** done diagonally – they do not follow the same cohort of students from one year to the next in order to calculate « attrition » or « drop-out rates » - these are the terms the authors use when they refer to the table and the calculations.

TABLE 6: Showing Average Declines in FSL Early Immersion Enrolments from Grade 1 to Grade 5, Between September 1997 and September 2006^a

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Grade 1	1,822	1,876	1,881	1,905	1,830	1,783	1,706	1,655	1,624	1,646
Grade 2	1,537	1,618	1,686	1,701	1,717	1,670	1,642	1,589	1,505	1,450
Grade 3	1,261	1,483	1,490	1,577	1,574	1,595	1,564	1,528	1,479	1,390
Grade 4	1,337 ^b	1,226	1,380	1,406	1,487	1,491	1,522	1,502	1,457	1,391 ^b
Grade 5 b	1,201	1,265	1,132	1,301	1,346	1,417	1,443	1,449	1,437	1,401 ^b
Net Change	621	611	749	604	484	366	263	206	187	245
% Change	- 34.1%	-32.6%	-39.8%	-31.7%	-26.4%	-20.5%	-15.4%	-12.4%	-11.5%	-14.9%

a

Department of Education, "Summary Statistics: School Year 2006-2007, Policy and Planning Department, March 2007.

b

anomalies may be due to merging of middle immersion students – Department data does not differentiate

In 1997 the % change or drop-out rate is reported as 34.1%. This is calculated vertically by dividing the number of students in Grade 1 in 1997 (1822) by the number in Grade 5 in that same year (1201). This gives a retention rate of 65.9 or a drop-out rate of 34.1. The problem is that this is not meaningful. In order to know the percentage of 1997 students who dropped out, one has to look at this same group in grade 5, five years later in 2001. The rate then is calculated as 1346/1822 or -26.2%, not -34.1%.

2. AVERAGE DECLINES IN FSL EARLY IMMERSION ENROLMENTS FROM GRADE 9 TO GRADE 12 2004-2007

STATISTICS CALCULATED WITH DATA FROM TWO DIFFERENT COHORTS : GR 9 2006 AND GR 12 2006 REPORT (TABLE 8)		STATISTICS RECALCUALTED FOLLOWING SAME COHORT FROM GR 9 2004 UNTIL GR 11 2006	
435/892	-51.2%	539/731	-26.3%

TABLE 8 in the FSL Report refers to the decline in Early immersion registrations for grades 9-12 for 2004-06. The percentage decline from grade 9 to grade 12 is reported as 59.3% in 2004. This was calculated by dividing the number of students in grade 12 in 2004 (466) by the number of students in grade 9 in 2004 (1146). Again, this is not meaningful. One would have to divide the number of students in grade 12 in 2004 by the total number of students who were in grade 9 four years earlier – in 2000. This enrolment figure is not available in the report.

TABLE 8: Showing Early Immersion Registrations by Grades 9, 10, 11 and 12 for 2004 – 5 through 2006 – 7_a

Year	Grade 9	Grade 10	Grade 11	Grade 12	% Decline 9 - 12	
2004	1146	973	618	466	59.3%	
2005		1188	1031	740	548	53.9 %
2006	1257	1131	845	613		51.2%

^a numbers are derived from actual school records in Department of Education data base

The decline in enrolment that can be calculated from grade 9 in this table is diagonal and only extends to grade 11. In 2004 when there were 1146 students in grade 9 and in 2006 there were 845 of this group remaining in grade 11. This would be a retention rate of 845/1146 or 73.7% or an attrition rate of 26.3%.

In fact, at this point, in order to calculate the retention rate for grade 12 we need the current year's grade 12 enrolment statistics as the 2004 grade 9 student cohort is now in grade 12 in 07-08.

3. AVERAGE DECLINES IN FSL LATE IMMERSION ENROLMENTS FROM GRADE 9 TO GRADE 12 BETWEEN SEPT 2004 AND SEPT 2006

STATISTICS CALCULATED USING TWO DIFFERENT COHORTS : GR 12 2006-07 AND GR 9 2006-07 REPORT (TABLE 11)		STATISTICS RECALCUALTED FOLLOWING SAME COHORT GROUPS : GR 9 2004-05 UNTIL GR 11 2006-07 AND GR 10 2004-05 UNTIL GR 12 2006-07	
711/857	-17.0%	Gr9/Gr11 795/1068	-25.6
		Gr10/Gr12 711/988	-28.7

TABLE 11 on p.46 calculates declines in Late French immersion registrations in the same way – this time using vertical data rather than diagonal data. For example it is calculated that in 2006-07 there were 857 students in grade 9 LFI and 711 in grade 12 . 711 is then divided by 857 to get a retention rate of 82.9% or a drop-out rate of 17%. This once again is not a meaningful statistic. The retention figures that should be used are from grade 9 in 2004 to grade 11 in 2006, moving diagonally. There were 1,068 LFI students in grade 9 in 2004 and 795 of these remained in LFI in grade 11 in 2006. This represents a retention rate of 795/1068 or 74.4% or an attrition rate of 25.6%. One can also move from Grade 10 in 2004 to Grade 12 in 2006 (711/988) which corresponds to an attrition rate of -28.7.

TABLE 11: Showing Declines in FSL Late Immersion Registrations from Grade 9 to Grade 12, Between September 2004 and September 2006^a

	2004-5	2005-6	2006-7
Grade 9	1,068	914	857
Grade 10	988	953	806
Grade 11	868	816	795
Grade 12	811	675	711
Net Change	257	239	146
% Change	- 24.06%	-26.15 %	- 17.04%

^a

Department of Education, School Year 2006-2007, Policy and Planning Department, March 2007.

The authors claim that, from Grade 9 to Grade 12, LFI is « a comparative success » and cite « drop-out » rates of 17% in 2006-07 in LFI compared to 51.2% in EFI. The problem, however, as the preceding paragraphs explain, these figures have been computed using data taken from the wrong cohort years and are meaningless. The only truly meaningful statistic one can take from these tables, moving diagonally, is that there was a retention rate of 73.7% (attrition rate of 26.3%) from Grade 9 to 12 in EFI from 2004 to 2006, During the same time period in LFI there was a retention rate of 74.4% (an attrition rate of 25.6%). So, we see the two programs from grade 9 to grade 11 are

nearly identical in their retention/attrition. This is a very different comparison than the 17% attrition for LFI and 51% attrition for EFI that was calculated in the report using data from two different cohorts.

4. AVERAGE DECLINES IN FSL EARLY AND LATE IMMERSION ENROLMENTS FROM GRADE 1 TO GRADE 5 BETWEEN SEPT 2002 AND SEPT 2006

STATISTICS CALCULATED USING COHORT DATA FROM GR 12, GR 1 EFI AND GR 6 LFI (ALL 2006-07 COHORTS) REPORT (TABLE 12)		STATISTICS RECALCUALTED FOLLOWING THE SAME COHORT GROUPS GR 1 EFI 1995 AND GR 6 LFI 2000 UNTIL GR 12 2006-07	
EFI	LFI	EFI	LFI
Gr12/Gr1 613/1646 37.2%	Gr12/Gr6 711/1020 69.7%	Gr12/Gr1 613/1469* 41.7%	Gr12/Gr6 711/1535 46.3%

*The 1469 figure for EFI Grade 1 enrolment is taken from the Report on p.10. TABLE 12 from the Report, reproduced below, is a victim of the same vertical calculation. The authors report a 69.7% retention for late French immersion (LFI) for 06-07 when in fact, if you follow the cohort back to the year 2000, there is actually a 46% retention rate for LFI. The authors have subtracted the number of students in Grade 12 in 06-07 (711) from the number of students in Grade 6 in the same year (1020). This is not correct. (See the corrected calculation above which follows the 06-07 grade 12 students back to 2000 when they entered the program. This figure is available from Table 14 of the report reproduced below.)

TABLE 12: Comparing FSL Early and Late Immersion Registrations for Grades 9 through 12 between September 2004 and 2006

	2004-5		2005-6		2006-7	
	Early	Late	Early	Late	Early	Late
Entry (G1/6)	1,655	1,161	1,624	1,045	1,646	1,020
Grade 9	1,146	1,068	1,188	914	1,257	857
Grade 10	973	988	1,031	953	1,131	806
Grade 11	618	868		740	816	845 795
Grade 12	466	811	548	675	613	711
% Persistence from entry	28.15%	69.85%	33.74%	64.6%	37.22%	69.7%

Table 14: Comparisons of Early and Late Immersion Registrations – 1997
–
2006

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Early Immersion ²	1882	1876	1881	1905	1830	1783	1706	1655	1624	1646
Late Immersions ³	1171	1268	1430	1535	1462	1261	1269	1161	1074	1020

The statistics from TABLES 11 and 12 are particularly important as the authors cited the nearly 70% retention rate of Late French Immersion as a critical factor in their decision to opt for this program over Early immersion. The authors admitted that Early immersion had better results with regard to French proficiency but cited this much higher 70% retention rate as a defining variable of the success of Late French Immersion. Doing the calculations by following the same cohort from entry to grade 12, as is required, retention rates in LFI are somewhat better than in EFI : 46% over 6 years compared to 42% over 12 years for EFI. This reveals a very different situation, however, from the nearly 70% LFI retention vs 37% EFI that the Report used as a basis for its conclusions. Moreover, the grade 9-12 retention/attrition rates are nearly identical for both programs.

5. Success Rate on the Oral Proficiency Interview (06-07).

Finally, there is one other statistic that is not related to retention/attrition specifically but which mixes attrition data for 2004-05 with the success rate on the Oral Proficiency Interview (OPI) in 2005-06 to come up with a most unusual measure of success on the OPI.

STATISTICS CALCULATED IN THE REPORT USING THE NUMBER OF 05-06 STUDENTS SUCCESSFUL ON THE OPI AS A PERCENTAGE OF THE TOTAL NUMBER OF STUDENTS WHO ENTERED IN EFI IN 1995		STATISTICS RECALCUALTED USING THE NUMBER OF 06-07 STUDENTS WHO WERE SUCCESSFUL ON THE OPI AS A PERCENTAGE OF THE TOTAL NUMBER TAKING THE TEST	
83/890	9.3%	13/23	56%

On p.10 in the section Early immersion program, it is reported that 137 students were successful on the oral proficiency interview. It is stated that this number is taken from 2005-06 data. This number is then used to calculate a percentage in relation to the number of students who entered early immersion in 1995 (06-07 data). Why are the numbers from 05-06 being used to calculate the success rate for 06-07?

Moreover, the success rate on the Oral Proficiency Interview in 2006-07 is the number who achieved the advanced goal (234) divided by the number who took the test that year (414). One cannot include students who did not take French immersion in Grade 12 or who did not take the oral proficiency test in the calculation of students who were not successful on the test.

These five examples refer only to attrition and retention. There are other issues with regard to how data are presented and analyzed that have been criticized by other statisticians but which are not addressed here. Any conclusions or recommendations based on these faulty data analyses must be seriously questioned with regard to their validity.