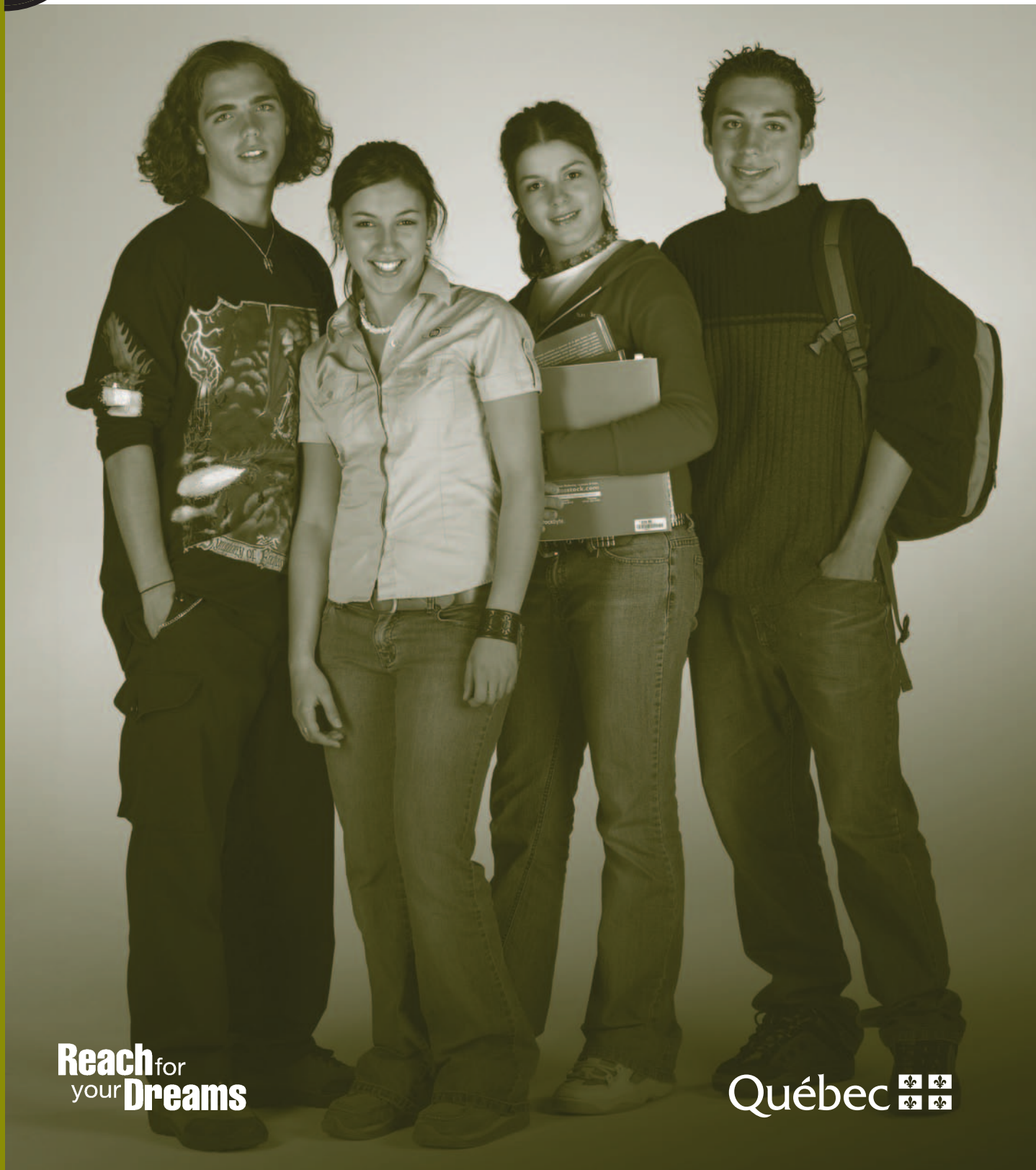
ACADEMIC SUCCESS AND THE GENDER GAP

THE INFLUENCE OF THE SOCIOECONOMIC ENVIRONMENT

EXPLORATORY ANALYSIS



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Introduction

For some years now, analyses of education data have shown a gap between the academic success rates of boys and girls. Boys are more likely than girls to experience academic delay, fail courses and drop out. Roughly 60% of boys obtain a secondary school diploma before the age of 20, compared to 75% of girls.[1] However, even though proportionally more boys than girls experience academic difficulties, these problems are not related to a gender characteristic. Neither boys nor girls constitute a homogeneous group, and many girls also experience difficulty at school.

Statistical analyses carried out to produce the document *Boys' Academic Achievement: Putting the Findings into Perspective*[2] have also allowed the question of academic success for boys to be examined from a new angle, namely, in terms of differences between boys. The data come from the AGIR system, are based on the Québec-wide indicators defined in the strategic plans,[3] and have been processed by school board.

Differences in academic success rates for boys vary more from one school board to the next than they do between groups of boys and girls. The pass rate for the French, language of instruction, examination also varies more among boys than it does among girls. Differences were also measured on the basis of socioeconomic indicators; however, since school boards define their own indicators, differences due to socioeconomic environment were hard to explain and gave contradictory results.

More analysis was needed in order to gain a clearer understanding of the academic success of Québec students in terms of their socioeconomic backgrounds. It was decided, therefore, to analyze the data using a socioeconomic indicator for each student. Of the Québec-wide indicators used by the Ministère de l'Éducation, du Loisir et du Sport (MELS), four appeared especially relevant for use in documenting differences between the academic success of boys and girls, and between groups of boys. They were: the age of students entering secondary school; the percentage of students leaving the school system without a diploma or other qualification; the percentage of Secondary V students who obtain a diploma; and the success rates for the official examinations in French or English, language of instruction.

To measure the socioeconomic situation of students, the MELS uses two indicators: the low-income cut-off (LICO) indicator, based on the percentage of families living under the low-income cut-off line, and the socioeconomic environment indicator (SEEI). The LICO indicator mainly includes low-income components. Given that the cut-off line varies with population density, applying the indicator to the whole of Québec is a complex task and comparisons across regions are difficult. The representatives of several regions have informed the MELS of the problems associated with the use of this indicator, stating that it does not provide an accurate reflection of the disadvantages that students experience.

Other types of analysis conducted to assess the influence of different variables on academic success led the MELS to develop the SEEI. The simple correlation between the proportion of families living below the LICO line and academic underachievement is 0.39, but two other variables play a more crucial explanatory role: the simple correlation between the proportion of mothers without a diploma and academic underachievement is 0.54, and the simple correlation between the proportion of parents who did not work in the year preceding the five-year Statistics Canada census is 0.41. These two variables determine 96.3% of academic underachievement, and are the two components of the SEEI used in this study. The SEEI is based on the mother's schooling (accounting for two thirds of the weight of the indicator) and the proportion of parents who did not work the previous year (accounting for one third), with no weighting for family income. The raw data, which come from Statistics Canada, were compiled, following the 2001 census, from a sample of households (families) in each of the 1 504 territorial units that make up the school population map of Québec. In other words, the factor for each student corresponds to the average derived from a sample of households (families) living in his or her territorial unit, and not to the particular situation of his or her family. Readers who wish to find out more about the subject should see *Education Statistics Bulletin No. 26, The School Population Map and Poverty Indicators*.[4]

The predictive value of the SEEI stems from the fact that the two variables, the mother's level of schooling and parental economic inactivity, both reflect broader situations, whether social, economic or cultural, that can have a positive or negative impact on students' academic

1 Québec, Ministère de l'Éducation, *Education Indicators, 2004 Edition.*

2 Québec, Ministère de l'Éducation, Direction de la recherche, des statistiques et des indicateurs, *Boys' Academic Achievement: Putting the Findings into Perspective* (Québec: Gouvernement du Québec, 2004). This document was prepared by Michelle Pelletier in conjunction with Jean Lamarre and Sylvie Rhéault.

3 Following the school boards' implementation of success plans, the Ministère de l'Éducation, du Loisir et du Sport du Québec undertook to collect and disseminate accurate data on various activities in the school system and on the results these generated. These data, presented using Québec-wide indicators, reflect the current situation of education in terms of various factors affecting achievement. They allow all players in the education system to diagnose the current situation of education in Québec, compare it with previous situations and follow up on actions taken to reorient the system.

4 Québec, Ministère de l'Éducation, Direction de la recherche, des statistiques et des indicateurs, *The School Population Map and Poverty Indicators, Education Statistics Bulletin* No. 26, prepared by Luc Beauchesne, March 2003. www.mels.gouv.qc.ca/stat/Bulletin/bulletin_26an.pdf

success. For example, low levels of schooling often lead to less favourable economic conditions, may account for some parents' difficulty in helping their children learn, or have a negative impact on their children's academic aspirations.

The SEEI data used in this study allow calculation of the decile rank of the students from 1 to 10, with 1 being the most favourable socioeconomic situation, and 10 the least favourable. The data concern only students attending public secondary schools in the general education program, in other words, students subject to compulsory school attendance. Interested readers can find the methodology for the analysis in the Appendix.

1 Age of students entering secondary school

In Québec, the normal academic progress of a student, in terms of age and level, is as follows: at age 4 to 5, enrollment in preschool education; at age 6, admission to Grade One of Elementary Cycle One; at age 7, admission to Grade Two, and so on, until the transition to Secondary I at age 12; and admission to Secondary V (the last secondary level) at age 16. Students who take an extra one, two or three years to complete this progression are said to experience "academic delay."

It is possible to measure academic delay when students enter secondary school, based on the assumption that a student who is 12 or under in Secondary I has not repeated any years of elementary school. The indicator is calculated by establishing the proportion of students aged 12 or under enrolling for the first time in Secondary I, as compared to all students enrolling in Secondary I for the first time.

From 1999-2000 to 2001-2002, the proportion of students with no academic delay when entering secondary school increased, in public schools, from 76.9% to 79.4%, a jump of 2.5 percentage points. The increase was greater for boys (3.3 percentage points) than for girls (1.4 percentage points). In the public school system in 2001-2002, almost 76% of boys entered Secondary I with no delay, compared to almost 83% of girls, a gap of 7 percentage points. The gap between boys and girls dropped between 1999-2000 and 2001-2002, from 8.9 to 7 percentage points (Table 1).

TABLE 1

Percentage of Secondary I students with no academic delay on entering secondary school, by sex, public school system, 1999-2000 to 2001-2002

No academic delay	1999-2000	2000-2001	2001-2002
Boys	72.6	73.8	75.9
Girls	81.5	81.6	82.9
Total	**76.9**	**77.6**	**79.4**

Source: MEQ, *Indicateurs nationaux, Système AGIR, 2004*.

When students are assigned a socioeconomic environment factor on the basis of the territorial unit in which they live, it becomes clear that the more favourable the socioeconomic environment, the lower the number of students experiencing academic delay. This holds true for both girls and boys. Table 2 shows the link between socioeconomic environment and the lack of academic delay on entering secondary school.

TABLE 2

Percentage of students with no academic delay on entering secondary school, by sex and socioeconomic environment, public school system, 2001-2002

Decile	Boys (%)	Girls (%)	Gap in percentage points
1	85.5	91.6	6.1
2	82.8	88.5	5.7
3	80.6	85.9	5.3
4	78.4	85.7	7.3
5	75.8	83.1	7.3
6	75.5	83.9	8.4
7	74.2	81.8	7.6
8	74.5	80.7	6.2
9	71.0	80.0	9.0
10	65.8	73.2	7.4
Difference (1-10)	19.7	18.4	-
Total	**75.9**	**83.0**	**7.1**

Source: MEQ, DRSI, *Compilations spéciales, 2004*.

The gap between boys and girls is clearly wider in the deciles corresponding to the most disadvantaged environments (9.0 and 7.4), and narrower in the deciles for the most advantaged environments (6.1 and 5.7). However, there are also wide gaps in the intermediate deciles.

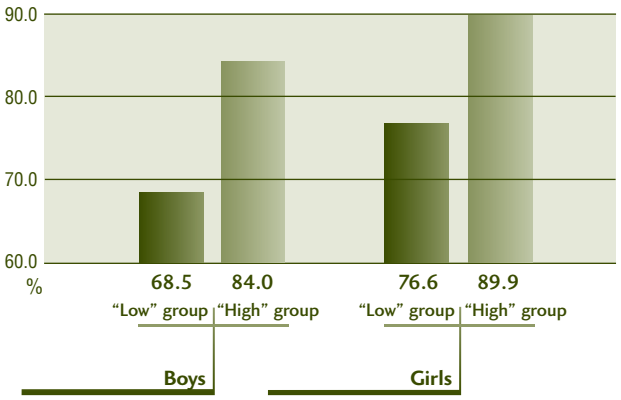
Focusing separately on the situation of boys and girls on the basis of their decile rank, it is clear that being disadvantaged has a major impact on academic delay for both girls and boys. There is a difference of 19.7 percentage points between boys in the most advantaged environments (decile 1) and boys in the most disadvantaged environments (decile 10), and a difference of 18.4 percentage points for girls. However, other factors can compound

the influence of the socioeconomic environment and help explain these differences. The gap between boys and girls is relatively stable from one decile to the next, except for the significant jump between deciles 9 and 10.

To illustrate the age at which students from different socioeconomic environments enter secondary school (Graph 1), deciles 9 and 10 (disadvantaged environment) have been grouped together in a "low" privilege group, and deciles 1 and 2 in a "high" privilege group.

In the public school system, 68.5% of boys from the "low" group enter secondary school with no academic delay, compared to 84% of boys from the "high" group, a difference of 15.5 percentage points. For girls, the difference between the two socioeconomic groups is similar, at 13.3%. However, whatever the socioeconomic environment, more girls than boys enter Secondary I with no academic delay. While 89.9% of girls from the "high" group enter secondary school with no academic delay, the figure drops to 76.6% for girls from the "low" group, a difference of 13.3 percentage points (Graph 1).

GRAPH 1 **Students entering Secondary I with no academic delay, by socioeconomic environment, public school system, 2001-2002**



It is important to remember that this indicator, age on entering secondary school, is an indirect measurement of the years repeated at the elementary level. Although it is fair to suppose that practically all students who have repeated one year begin secondary school at age 13 or higher, it cannot be assumed that all students over the age of 12 have repeated a year. Other reasons can explain the delay: relocation, sickness, temporary absence from school or a recent arrival in the Québec school system. However, according to a study carried out by the MEQ in 1991, repeated years explain 90% of all academic delays.[5]

OBSERVATIONS

More boys than girls begin Secondary I with an academic delay.

In the public school system, the proportion of students entering secondary school with no academic delay increased in 2001-2002. A bigger increase was recorded for boys than for girls.

There is a link between the characteristics of a student's socioeconomic environment and the likelihood of the student, whether a boy or a girl, entering secondary school with no academic delay.

Girls, whether from advantaged or disadvantaged environments, are more likely than boys to enter Secondary I with no academic delay.

A disadvantaged socioeconomic environment has more influence than gender over the age at which students enter secondary school, but at each socioeconomic level the gap between boys and girls is almost identical.

5 Québec, Ministère de l'Éducation, *Retard scolaire au primaire et risque d'abandon scolaire au secondaire,* prepared by Yves Brais, September 1991, p. 25.

2 Secondary school students who leave the school system without a diploma or other qualification, by grade level

A second indicator is used to analyze the influence of the socioeconomic environment on student success. This is the proportion of students who leave the school system during Secondary Cycle Two without a diploma or other qualification, counting only those students who do not enroll the following year in any type of training in the Québec education system.

The number of students enrolled in Secondary III, IV or V who leave school without a diploma or other qualification is compared to the total number of students enrolled in each year. The indicator takes into account the percentage of students who leave the school system for the entire year following the observation year. It is important to note that students leaving school without a diploma or other qualification have not necessarily dropped out. Their departure may be permanent or temporary; some may return to school to obtain a diploma. From 1999-2000 to 2001-2002, the proportion of students leaving Secondary Cycle Two without a diploma or other qualification increased slightly. The increase over the whole period was 0.1 percentage points, for both boys and girls. The gap between boys and girls remained steady at 3.3 percentage points (Table 3).

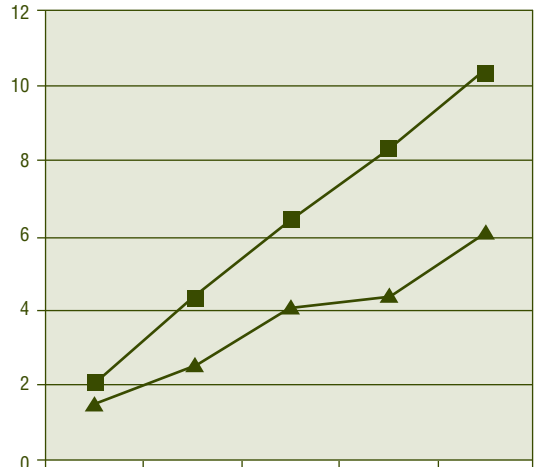
TABLE 3 Students leaving Secondary Cycle Two without a diploma or other qualification, by sex, public school system, 1999-2000 to 2001-2002

	1999-2000	2000-2001	2001-2002
Boys	8.0	8.2	8.1
Girls	4.7	4.9	4.8
Total	**6.4**	**6.6**	**6.5**

Source : MEQ, DRSI, *Indicateurs nationaux, Système AGIR, 2004.*

Graph 2 shows the percentage of students leaving school without a diploma or other qualification, by grade level. For comparison purposes, the data for Secondary I and II have been included. There is a regular progression from one year to the next. From 1.9% in Secondary I, the percentage of students leaving school without a diploma or other qualification climbs to 8.2% in Secondary V.

GRAPH 2 Students leaving school without a diploma or other qualification, by grade level, as a percentage of all students enrolled at the secondary level, by sex, public school system, 2001-2002



%	Secondary I	Secondary II	Secondary III	Secondary IV	Secondary V
■ Boys	2.1	4.3	6.4	8.2	10.3
▲ Girls	1.6	2.6	4.1	4.4	6.1

The gap between boys and girls also increases from one year to the next. The gap is almost nonexistent in Secondary I, and then increases to 3.8 percentage points in Secondary IV and 4.2 percentage points in Secondary V. Unlike the other indicators, for which the gap between boys and girls remains roughly similar for each year, this gap tends to increase, especially in Secondary IV.

To analyze the link between the socioeconomic environment and the number of students leaving without a diploma or other qualification, the percentage of school-leavers has been calculated for each decile.

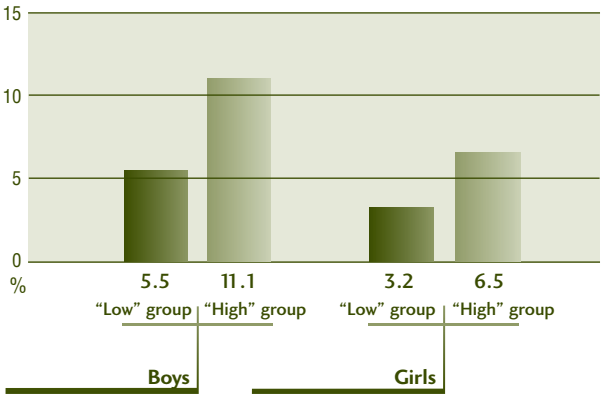
The data in Table 4 show clearly that the proportion of students, especially boys, leaving school without a diploma rises with the level of disadvantage. But regardless of the decile, more boys than girls leave school without a diploma or other qualification. The more disadvantaged the environment, the greater the gap between boys and girls.

TABLE 4 Percentage of students leaving Secondary Cycle Two without a diploma or other qualification, by sex and socioeconomic environment, public school system, 2001-2002

Decile	Boys (%)	Girls (%)	Gap in percentage points
1	5.1	3.1	2.0
2	5.8	3.3	2.5
3	6.7	4.0	2.7
4	6.5	3.9	2.6
5	7.9	4.9	3.0
6	8.3	5.5	2.8
7	9.0	4.9	4.1
8	9.1	5.0	4.1
9	9.9	5.6	4.3
10	12.4	7.5	4.9
Difference (1-10)	7.3	4.4	–
Total	**8.1**	**4.8**	**3.3**

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

GRAPH 3 Students leaving Secondary Cycle Two without a diploma or other qualification, by sex and socioeconomic environment, public school system, 2001-2002



As in the case of the data relating to delayed entry to secondary school, there is a big jump, for both boys and girls, between deciles 9 and 10 (disadvantaged environments.) In 2001-2002, 9.9% of boys in decile 9 left school without a diploma or other qualification, a percentage that jumps to 12.4% in decile 10. For girls, the percentage jumps from 5.6% to 7.5%.

The number of students from disadvantaged environments who leave Secondary Cycle Two without a diploma or other qualification is almost double that for students from more advantageous environments. This holds true for both boys and girls: 55.5% of boys from advantaged backgrounds (deciles 1 and 2) leave school without a diploma or other qualification, compared to 11.1% of boys from disadvantaged environments (deciles 9 and 10); among girls, the rates are respectively 3.2% and 6.5%. This means that the gap between boys and girls is twice as great in disadvantaged environments (4.6 percentage points) as in advantaged environments (2.3 percentage points). The data in Graph 3 show that boys from a disadvantaged environment are more likely to leave school without a diploma.

OBSERVATIONS

The proportion of students leaving school without a diploma or other qualification increases gradually from Secondary I to Secondary V, and is systematically higher among boys.

The proportion of students leaving the school system without a diploma or other qualification is higher among students from disadvantaged environments, especially boys. The proportion for both boys and girls is twice as high in the most disadvantaged environments as it is in the most advantaged.

Boys from disadvantaged environments are more likely to leave school without obtaining a diploma.

The gap between boys and girls, in terms of the number leaving school without a diploma or other qualification, widens as disadvantage levels rise.

5 Students leaving Secondary V with a diploma

This indicator measures the percentage of students enrolled in Secondary V who have obtained a diploma[6] during a specific year. Students who had already left the school system before Secondary V are not counted.

The percentage of secondary students leaving school with a diploma increased from 73.9% in 1999-2000 to 74.4% in 2000-2001, and then dropped to 73.5% in 2001-2002. This up and down trend mainly affected boys, since percentages for girls hardly varied. The variation in the gap between boys and girls during this three-year period was caused mainly by the fluctuation in the percentage of boys leaving school with a diploma at the end of Secondary V (Table 5).

TABLE 5 Percentage of Secondary V students leaving school with a diploma, by sex, public school system, 1999-2000 to 2001-2002

	1999-2000	2000-2001	2001-2002
Boys	67.9	68.6	66.9
Girls	79.7	79.9	79.7
Total	**73.9**	**74.4**	**73.5**

Source : MEQ, DRSI, *Indicateurs nationaux, Système AGIR, 2004*.

The relationship between the socioeconomic environment and the percentage of Secondary V students leaving school with a diploma is illustrated in Table 6. Despite several contrary tendencies, especially in deciles 6 and 7, the main trend is clear: the more disadvantaged the socioeconomic environment (deciles 9 and 10), the lower the percentage of Secondary V students leaving school with a diploma, for both boys and girls, with a similar gap between students in decile 1 (advantaged) and decile 10 (disadvantaged) in both groups. Regardless of the decile, more girls than boys leave school with a diploma.

Like the other indicators, the indicator illustrated in Table 6 shows a large gap between the percentage of Secondary V students leaving school with a diploma in decile 10 (disadvantaged environment) and those in decile 9, the next highest decile. The difference between deciles 9 and 10 is 3.4 for boys and 5.0 for girls.

TABLE 6 Percentage of Secondary V students leaving school with a diploma, by sex and socioeconomic environment, public school system, 2001-2002

Decile	Boys (%)	Girls (%)	Gap in percentage points
1	74.4	85.5	11.1
2	73.5	82.9	9.4
3	70.8	82.9	12.1
4	68.7	80.9	12.2
5	65.3	78.7	13.4
6	67.2	79.1	11.9
7	64.9	80.6	15.7
8	64.0	78.4	14.4
9	61.7	77.1	15.4
10	58.3	72.1	13.8
Difference (1-10)	16.1	13.4	–
Total	**66.9**	**79.7**	**12.8**

Source : MEQ, DRSI, *Compilations spéciales, 2004*

6 The diplomas in question are the Secondary School Diploma (SSD), the Diploma of Vocational Studies (DVS), the Attestation of Vocational Education (AVE) and the Attestation of Vocational Specialization (AVS). Qualifications obtained in a Centre de formation en entreprise et récupération (CFER) or in individualized paths for learning in life skills and work skills education have been excluded from the diplomas taken into account for this indicator.

To give a clearer view of the situation, Graph 4 brings together deciles 9 and 10 (disadvantaged environment) in the "low" privilege group, and deciles 1 and 2 (advantaged environment) in the "high" privilege group.

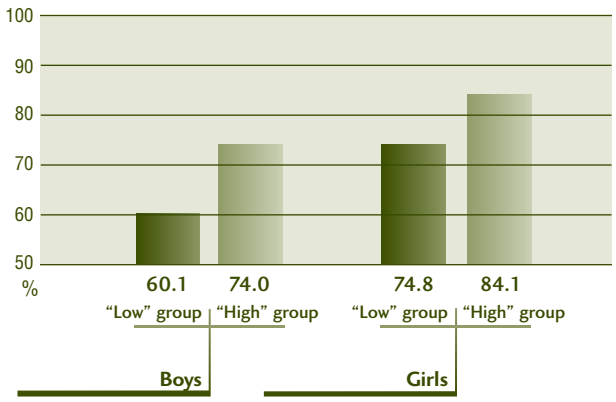
There is a large difference between the percentage of students obtaining a diploma in the two socioeconomic groups. For boys, the difference between the "high" and "low" groups is 13.9 percentage points, and for girls, 9.3 percentage points. These differences for boys and girls, respectively, are almost identical to the gap between boys and girls in the same socioeconomic group (14.7 and 10.1 percentage points).

OBSERVATIONS

From 1999-2000 to 2001-2002, the percentage of Secondary V students leaving school with a diploma dropped, and the gap between boys and girls increased, especially because of the fluctuation in the percentage of boys obtaining a diploma.

The more disadvantaged the socioeconomic environment, the lower the percentage of Secondary V students leaving school with a diploma, a situation that affects boys more than girls.

GRAPH 4 Students leaving Secondary V with a diploma, by sex and socioeconomic environment, public school system, 2001-2002



4 Pass rates for the Secondary V ministerial examination in French, language of instruction

For certification of study purposes, the MELS sets a French examination for Secondary V students. The examination has three components: a written essay, a reading comprehension test, and an oral expression test.

The final mark breaks down as follows: 50% for the written essay, 40% for the reading comprehension test and 10% for oral expression.[7] The pass mark is 60%. Because of the way the final mark is calculated, a student may fail one component but still pass the examination.[8] Marking of the written essay is done by the MELS, while the reading and oral tests are marked by the schools in accordance with MELS instructions. In interpreting the data, attention should bear mainly on the mark for the written essay, since this makes up 50% of the final mark and relates to a uniform examination imposed by the MELS.

The indicator for the Secondary V ministerial examination in French, language of instruction, represents the proportion of students who passed the examination out of all those who took it.[9] This calculation is based solely on the results for students whose language of instruction is French.

Concerning the overall results, Table 7 shows that the percentage of students, both boys and girls, who passed the exam dropped from 94.6% in 1999-2000 to 92.9% in 2001-2002. However, the drop was greatest among boys, widening the gap between them and girls from 5.6 percentage points in 1999-2000 to 6.5 points in 2001-2002.

Separate analysis of each component shows that the pass rate for the written essay has dropped considerably, while the pass rates for reading comprehension and oral expression show, respectively, basic stability and improvement. The pass rates are often lowest for reading comprehension and highest for oral expression. The widest gaps between the results for girls and boys are observed in reading comprehension, the narrowest in oral expression. It is important to remember that the data for each component must be considered separately from the data on overall results.

TABLE 7 Pass rate for the examination in French, language of instruction, by sex, public school system, 1999-2000 to 2001-2002

Component	Sex	1999-2000 (%)	2000-2001 (%)	2001-2002 (%)
Overall	Boys	91.6	90.5	89.3
	Girls	97.2	95.9	95.8
	Total	**94.6**	**93.4**	**92.9**
Written essay	Boys	87.6	82.8	77.1
	Girls	94.8	91.1	86.9
	Total	**91.5**	**87.3**	**82.5**
Reading comprehension	Boys	77.1	77.4	78.0
	Girls	89.3	88.3	90.5
	Total	**83.8**	**83.3**	**84.9**
Oral expression	Boys	90.5	90.5	93.3
	Girls	95.9	95.8	97.1
	Total	**93.4**	**93.3**	**95.4**

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

Table 7 shows that 91.5% of students passed the written essay component in 1999-2000, compared to 82.5% in 2001-2002, a drop of 9 percentage points. The drop was greatest among boys, and the gap between girls and boys increased from 7.2 to 9.8 percentage points.

7 Without going into detail, it should be noted that conversion and moderation mechanisms are applied to the final mark to ensure that the examinations are of comparable difficulty from one year to the next, and that the differences between the marks obtained at different schools take into account the varying degree of difficulty of the local examinations.

8 In June 2003, the way in which the overall mark is calculated was changed. Students must now obtain at least 50% in each of the three components, and 60% overall.

9 For example, for the 2001-2002 cohort, the sessions considered are as follows: January 2001, term-based courses only, for example students who take an exam in January for an accelerated course completed during the 2000 fall term; June 2001: the main exam session. August 2001: mainly re-takes. January 2002: re-takes only.

With regard to the reading comprehension component, the gap between boys and girls decreased slightly in 2000-2001, and then increased by 1.6 percentage points in 2001-2002. The gap did not, therefore, vary much over the period studied; it was 12.2 percentage points in 1999-2000 and 12.5 points in 2001-2002.

Last, with regard to the oral expression component, which accounts for only 10% of the overall mark, the pass rate went up more for boys than for girls. The gap between the two groups narrowed from 5.4 percentage points in 1999-2000 to 3.8 points in 2001-2002.

To pass each component in the French, language of instruction, examination, students must obtain 60% or higher. In 2001-2002, 89.3% of boys and 95.8% of girls achieved this mark. The overall average mark (including students who failed) was 72.1%. The average mark for girls was 74.5% and, for boys, 69.1%, a gap of 5.4 percentage points (data not presented here.)

The data in Table 8 show a link between the pass rate for all the components of the French examination and the socioeconomic environment, since the pass rate drops steadily, for both girls and boys, as students become more disadvantaged.

There is a difference of 5.3 percentage points between the pass rates for boys in the most advantaged and most disadvantaged environments. The corresponding difference for girls is 3.2 points. The gap between the pass rates for girls and boys tends, despite some variations, to increase with the socioeconomic environment indicator. Boys from more disadvantaged socioeconomic environments are affected more than girls.

TABLE 8

Pass rate for the French, language of instruction, examination, by sex and socioeconomic environment, public school system, 2001-2002

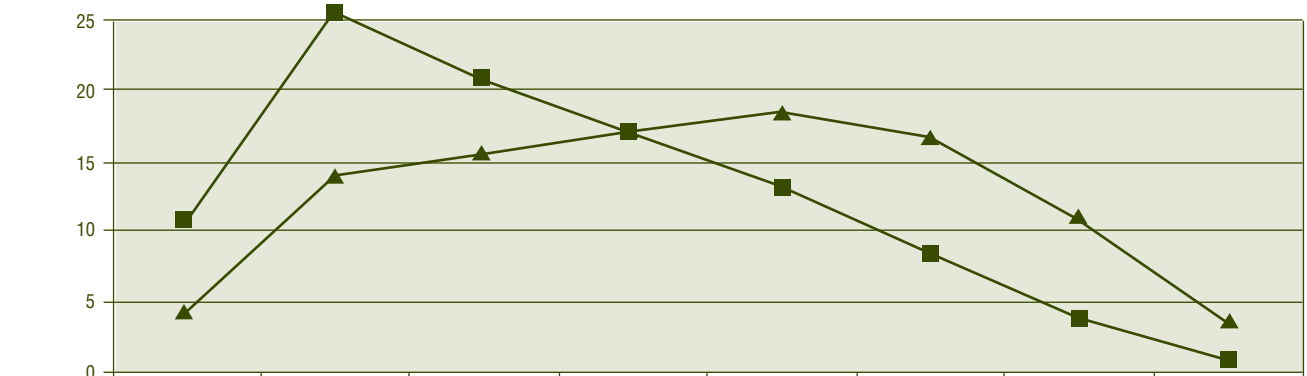
Decile	Boys (%)	Girls (%)s	Gaps in percentage points
1	90.9	96.9	6.0
2	91.2	96.2	5.0
3	90.8	96.6	5.8
4	90.0	96.0	6.0
5	89.3	95.6	6.3
6	89.2	96.2	7.0
7	88.6	95.8	7.2
8	89.2	95.6	6.4
9	87.7	95.2	7.5
10	85.6	93.7	8.1
Difference (1-10)	5.3	3.2	–
Total	**89.3**	**95.8**	**6.5**

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

However, the pass rates do not reveal all the nuances or explain all the differences between boys and girls, or between boys from various backgrounds. This can be done by distributing the marks obtained by Secondary V students in general youth-sector education, regardless of socioeconomic environment, in five-percent increments. As shown in Graph 5, most boys obtained a mark between 60% and 70%, since 25.6% of boys obtained between 60% and 64%, and 20.6% between 65% and 69%. The proportion of boys who score in each five-percent bracket decreases steadily as the mark rises.

GRAPH 5

Average mark obtained in the French, language of instruction, examination, by sex, public school system, 2001-2002



%	< 60	60-64	65-69	70-74	75-79	80-84	85-89	90 and +
■ Boys	10.7	25.6	20.6	17.1	13.2	8.3	3.9	0.8
▲ Girls	4.2	14.0	15.4	16.9	18.4	16.7	10.8	3.5

The distribution is more even for girls. A comparable percentage of girls and boys obtain a mark between 70% and 74%, respectively 16.6% and 17.3%. However, many more girls than boys obtain a mark over 75%. At the high point of the distribution, 18.4% of girls obtained a mark between 75% and 79%. While only 13.0% of boys obtain a mark of 80% or over, 31.0% of girls achieve the same result, in other words, over twice as many. Girls' marks increase continuously up to the 75% to 79% level, while boys' marks drop steadily once the pass mark has been reached.

Table 9 focuses in more detail on the link between the mark for each component of the examination, and the student's socioeconomic situation. Boys obtain lower marks than do girls for all components, regardless of socioeconomic background. For all the components, girls from disadvantaged environments (deciles 9 and 10) obtain higher marks than boys from advantaged environments (deciles 1 and 2.) On the other hand, students from advantaged environments obtain higher marks for every component than do students of the same sex from a disadvantaged environment.

The data presented in Table 9 also show that the differences between the marks obtained by students from the "high" and "low" privilege groups are not necessarily higher for boys than for girls, or vice versa. For the overall mark in French (see Table 9,) the difference is 4.3 percentage points for boys and 1.9 points for girls. On the other hand, for the reading comprehension test, the difference is 2.7 percentage points for boys and 5.1 points for girls. Within both the "boy" and "girl" groups, the most important difference linked to socioeconomic environment is in the essay writing component, where it is 6.2 percentage points for boys and 5.4 points for girls. It should be remembered that the mark obtained for the written essay makes up 50% of the overall mark, and relates to a uniform exam set by the MELS.

TABLE 9

Pass rate for the French, language of instruction, by sex and socioeconomic environment, public school system, 2001-2002

COMPONENT	BOYS			GIRLS		
	"High" group (deciles 1 and 2) (%)	"Low" group (deciles 9 and 10) (%)	Difference (%)	"High" group (deciles 1 and 2) (%)	"Low" group (deciles 9 and 10) (%)	Difference (%)
Overall	91.1	86.7	4.3	96.5	94.6	1.9
Written essay	79.9	73.7	6.2	88.6	83.2	5.4
Reading comprehension	79.4	76.7	2.7	93.3	88.1	5.1
Oral expression	92.9	91.7	1.2	97.8	96.3	1.5

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

The data presented in Table 10 show the distribution of marks that boys in the public school system obtained for the various components of the examination in French, language of instruction. Table 11 presents the matching data for girls.

There are some similarities between the results obtained by boys from advantaged environments (the "high" group) and those from disadvantaged environments (the "low" group.) An asterisk marks the categories in which a significant difference can be observed between the groups. For the overall mark and for the essay writing component, a similar percentage of boys obtained a mark between 65% and 74%, namely 38% of boys for the overall mark and 27% of boys for the essay writing component. However, a higher proportion of boys from a disadvantaged environment obtained marks below 60%, and between 60% and 64%.

For the reading component, similar proportions were observed for the two groups above a mark of 65%, and for the oral component, the only difference was for marks between 85% and 89%.

Table 11 shows that girls from a disadvantaged environment (the "low" group) are proportionally more likely to obtain less than 74% in the overall result and the writing component. Girls from an advantaged environment (the "high" group) are more likely to obtain a mark of 80% or over.

TABLE 10

Average mark obtained for the examination in French, language of instruction, by socioeconomic environment, boys, public school system, 2001-2002

Average mark	Overall result *		Writing		Reading*		Oral expression	
	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)
Below 60 %	8.9*	13.3*	20.1*	26.3*	20.6*	23.3*	7.1	8.3
60-64 %	22.9*	27.0*	14.3*	17.5*	19.3*	22.4*	7.2	6.9
65-69 %	20.3	20.7	13.1	14.7	20.2	20.2	10.9	11.7
70-74 %	17.3	17.0	14.1	12.4	17.1	15.7	17.0	17.7
75-79 %	15.1*	11.2*	13.9*	11.2*	12.5	10.9	20.2	20.1
80-84 %	9.3*	7.2*	11.8*	9.1*	6.6	5.4	17.7	19.0
85-89 %	5.0*	3.2*	8.3*	6.0*	3.2*	1.6*	12.6*	10.0*
90 % and +	1.2*	0.5*	4.4*	2.8*	0.4	0.4	7.2	6.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Differences not specific to the cohort. See Appendix 1, Methodology.

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

TABLE 11

Average mark obtained for the examination in French, language of instruction, by socioeconomic environment, girls, public school system, 2001-2002

Average mark	Overall result *		Writing		Reading*		Oral expression	
	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)	"High" group (1-2)	"Low" group (9-10)
Below 60 %	3.5*	5.4*	11.4*	16.8*	6.7*	11.9*	2.2*	3.7*
60-64 %	11.9*	17.0*	8.8*	10.6*	12.1*	15.0*	3.0	3.9
65-69 %	13.4*	17.0*	10.4*	12.2*	16.2*	20.3*	4.9*	6.9*
70-74 %	15.2*	17.5*	11.6	12.5	18.6	18.7	10.5*	13.1*
75-79 %	18.6	17.9	13.8	13.4	19.8*	17.3*	19.4	19.1
80-84 %	19.0*	14.3*	16.2	14.6	15.2*	10.1*	23.6	24.1
85-89 %	13.4*	8.6*	15.2*	11.9*	8.5*	5.2*	21.0*	18.9*
90 % and +	5.1*	2.3*	12.6*	7.9*	3.0*	1.6*	15.4*	10.3*
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Differences not specific to the cohort. See Appendix 1, Methodology.

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

For the reading component, the proportion of girls who obtained a mark below 69% increases dramatically in the "low" group, while the proportion who obtained a mark of 75% or over decreases. The situation is the opposite for the "high" group. For the oral expression component, the differences between the "high" and "low" groups are less marked, except for marks of 90% or over.

Graphs 6 and 7 illustrate the data presented in Tables 10 and 11 for overall marks.

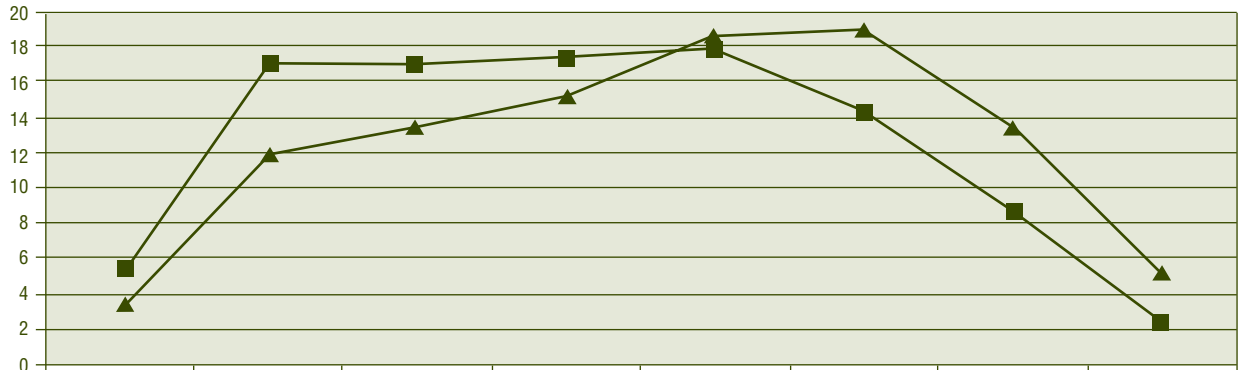
GRAPH

6 **Average overall mark obtained in the French, language of instruction, examination, by socioeconomic environment, boys, public school system, 2001-2002**

%	< 60 %	60-64 %	65-69 %	70-74 %	75-79 %	80-84 %	85-89 %	90 % and +
▲ Deciles 1 and 2	8.9	22.9	20.3	17.3	15.1	9.3	5	1.2
■ Deciles 9 and 10	13.3	27	20.7	17	11.2	7.2	3.2	0.5

GRAPH

7 **Average overall mark obtained in the French, language of instruction, examination, by socioeconomic environment, girls, public school system, 2001-2002**



%	< 60 %	60-64 %	65-69 %	70-74 %	75-79 %	80-84 %	85-89 %	90 % and +
▲ Deciles 1 and 2	3.5	11.9	13.4	15.2	18.6	19	13.4	5.1
■ Deciles 9 and 10	5.4	17	17	17.5	17.9	14.3	8.6	2.3

OBSERVATIONS

The percentage of students passing the examination in French, language of instruction, fell between 1999-2000 and 2001-2002 from 94.6% to 92.9%.

Pass rates for the various components of the exam were higher among students from advantaged environments than they were among students from disadvantaged environments, for both sexes.

With regard to the various components of the exam, the lowest pass rate was for the reading component, and the highest for the oral expression component. The biggest year-to-year drop occurred in 2001-2002 among boys in the writing component.

The widest gaps between girls and boys were observed in the reading component, and the narrowest in the oral expression component. In all components, boys had lower marks than girls.

Boys were less likely than girls to pass all components of the exam, regardless of socioeconomic background.

For all components, the pass rate for girls from disadvantaged socioeconomic environments was higher than the pass rate for boys from advantaged environments.

In the French, language of instruction, examination, a higher proportion of boys from disadvantaged backgrounds obtained an overall average mark below that of boys from advantaged backgrounds.

5 Pass rates for the Secondary V ministerial examination in English, language of instruction

The Secondary V ministerial examination for English, language of instruction, has a single component. Marking is done by the schools, following ministerial instructions.[10]

The pass rate represents the proportion of all students who took the exam, counting all the sessions, who obtained a mark of 60% or over.[11] The calculation is based solely on the results for students whose language of instruction is English.

TABLE 12

Pass rate for the English, language of instruction, examination, by sex, public school system, 1999-2000 to 2001-2002

Exam	Sex	1999-2000 %	2000-2001 %	2001-2002 %
English	Boys	93.7	94.0	93.4
Language	Girls	97.7	97.3	97.5
Arts	**Total**	**95.7**	**95.7**	**95.4**

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

The pass rate observed since 1999 has been stable, with statistically insignificant variations. Thus 95% of English-language students pass the English, language of instruction, examination. The gap between boys and girls hovers around 3.5 percentage points, or between 3.3 and 4.0, depending on the year (see Table 12).

The gender gap of 4.1 percentage points in the 2001-2002 pass rate fails to reveal the widely different distribution of marks within the two groups.

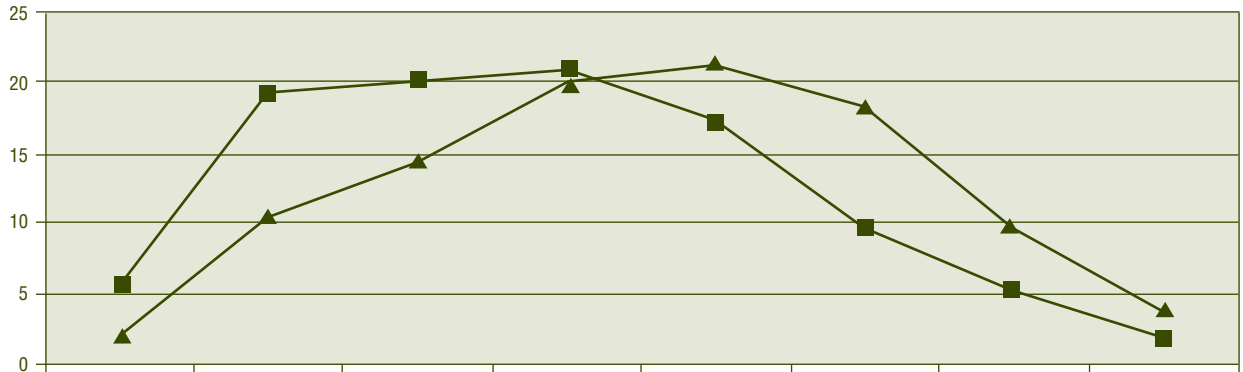
The distribution in Graph 8 shows that most boys fall within the 60% to 69% bracket, whereas most girls are in the 70% to 79% range. More precisely, 39.4% of boys obtained a mark between 60% and 69%, while 37.9% attained between 70% and 79%. Among girls, 41.4% obtained a mark between 70% and 79%, and 27.9% between 80%

10 Without going into detail, it should be noted that conversions and moderation mechanisms are applied to the final mark to ensure that the examinations are of comparable difficulty from one year to the next, and that the differences between the marks obtained at different schools take into account the varying degree of difficulty of the local examinations.

11 For example, for the 2001-2002 cohort, the sessions considered are as follows: January 2001, term-based courses only (for example, students who take an exam in January for an accelerated course completed during the 2000 fall term; June 2001, the main exam session; August 2001, mainly re-takes. January 2002, re-takes only.

GRAPH 8

Average mark obtained in the English, language of instruction, examination, by sex, public school system, 2001-2002



	< 60 %	60-64 %	65-69 %	70-74 %	75-79 %	80-84 %	85-89 %	90 % and +
■ Boys	5.7	19.3	20.1	20.7	17.2	9.7	5.3	2.0
▲ Girls	2.2	10.4	14.4	20	21.3	18.3	9.6	3.8

and 89%. Girls are proportionally twice as numerous as boys in the 80% to 89% bracket. Boys are less likely to have high marks. Also, the dispersion of the distribution is greater, with a variance of 101.01, compared to 80.6 for girls. The same distribution (to a few decimal places) can be observed in the data for 2000-2001 (not presented).

Table 13, for the English, language of instruction, examination, shows that the link between the pass rate and the socioeconomic environment is less evident than for the French, language of instruction, examination. However, especially for boys, there is a relatively large gap between the pass rates in the highest and lowest deciles.

The gap between boys and girls varies widely for each decile, especially for those in the mid range. For example, in socioeconomic decile 6, the gap between boys and girls is 7.2 percentage points, compared to only 1.9 percentage points in decile 5. However, when the deciles are combined (1 to 3, 4 to 7, and 8 to 10) to obtain frequencies that yield more stable results (around 1 000 individuals), the gap tends to widen between for boys and girls in the most disadvantaged socioeconomic environments.

OBSERVATIONS

The pass rate for the English, language of instruction, exam is high, and the gaps between boys and girls are less significant and less stable than those reported for the French, language of instruction, examination, especially among students from more advantaged environments (deciles 1 to 5.)

There is a link between socioeconomic environment and pass rates for the English, language of instruction, examination. However, analysis is limited by the low student population studying in English, for each decile, and by the generally high pass rate.

TABLE 13 Pass rate for the English, language of instruction, examination, by sex and socioeconomic environment, public school system, 2001-2002

Decile	Boys (%)	Girls (%)s	Gaps in percentage points
1	96.1	98.4	2.3
2	94.9	98.6	3.7
3	94.9	98.1	3.2
4	93.6	98.5	4.9
5	93.4	95.3	1.9
6	89.0	96.2	7.2
7	90.9	96.7	5.8
8	92.2	97.9	5.7
9	92.4	97.1	4.7
10	89.5	96.3	6.8
Difference (1- 10)	6.6	2.1	–
Total	**93.4**	**97.5**	**4.1**

Source : MEQ, DRSI, *Compilations spéciales, 2004*.

Conclusion

This study reveals a gap between the educational success rates of boys and girls, depending on the socioeconomic environment. Four indicators were used: the age of students entering secondary school, the percentage of students leaving the school system without a diploma or other qualification, the percentage of Secondary V students who obtain a diploma, and the pass rates for the ministerial examinations in French, language of instruction, and English, language of instruction.

As with studies conducted in other countries, this study's results confirm the link between academic success and a student's socioeconomic environment. This document highlights three general observations. First, although there is a gap between the academic success of boys and girls, it is less dramatic than the corresponding difference for boys and girls from different socioeconomic backgrounds.[12] In addition, the gap between boys and girls tends to narrow in the more advantaged groups and to widen in the more disadvantaged groups.[13] Last, as a corollary, socioeconomic background appears to affect boys more than girls in terms of academic success.

While boys and girls from all backgrounds are subject to various factors that can cause them to repeat a year, experience academic delays, or drop out of school, it is a known fact that such factors are compounded by socioeconomic disadvantages. Just as the difficulties affecting some boys cannot be extended to all boys, socioeconomic factors cannot be assumed to affect all young people from a given environment. In addition, the statistical data used here show that students from disadvantaged backgrounds have proportionally more problems achieving academic success. This applies mainly to students in decile 10, whose results differ significantly from those in the next higher decile, decile 9.

With regard to the indicators used in this study, the statistical data show that boys entering secondary school from both advantaged and disadvantaged environments are proportionally more likely than girls to experience academic delay, although there is a considerable gap between the two groups.

Also, the proportion of students who leave school without a diploma or other qualification is roughly twice as high for those from disadvantaged backgrounds, compared with those for advantaged backgrounds. This holds for both boys and girls. The gap between them also increases significantly from one grade level to the next, especially in Secondary IV. Boys from disadvantaged backgrounds are the most likely to leave school before obtaining a diploma.

It appears that the gap between the proportion of boys and girls who obtain a Secondary V diploma is similar, regardless of their socioeconomic background. It is also important to note that the students who experience the most difficulty (for the most part boys) leave school before reaching Secondary V, the last grade level.

Gender seems to be a key determinant in success rates for the French, language of instruction, examination. For all components of the exam, boys have lower marks than girls, regardless of socioeconomic background. The widest gap between boys and girls is in reading comprehension, and the narrowest in oral expression. With regard to the overall results for the exam, girls from the most disadvantaged socioeconomic background score higher than boys from the most advantaged background. In contrast, the pass rate for the English, language of instruction, examination is high, and the gap between boys and girls relatively narrow.

Recent studies conducted in Québec[14] [15] and elsewhere in the world tend to show that mastery of the language of instruction, especially in terms of written comprehension, is one of the foundations for academic success at both the elementary and secondary levels, and that boys, especially from disadvantaged backgrounds, are the students who experience the most difficulty in this area.

12 Marie Duru-Bellat, "Filles et garçons à l'école, approches sociologiques et psycho-sociale (1re partie)," *Revue française de pédagogie,* n°109, (October-November 1994): 75-109.

13 Government of Canada, Human Resources Development Canada, Statistics Canada, *Measuring up: The performance of Canada's youth in mathematics, reading, science and problem solving,* OECD PISA Study, December 2001.

14 Québec, Ministère de l'Éducation, du Loisir et du Sport, Direction de la recherche, des statistiques et des indicateurs, *Apprendre à lire,* Action concertée pour le soutien à la recherche en lecture, prepared by Michelle Pelletier, March 2005. (www.mels.gouv.qc.ca/stat/recherche/index.htm)

15 Québec, Ministère de l'Éducation, du Loisir et du Sport, Direction de la recherche, des statistiques et des indicateurs, *La lecture chez les élèves du secondaire,* Action concertée pour le soutien à la recherche en lecture, prepared by Michelle Pelletier, March 2005. (www.mels.gouv.qc.ca/stat/recherche/index.htm)

Appendix

METHODOLOGY

Source of data

The data on the academic progress of students come from the Banque de cheminement scolaire (BCS) of the MELS. They cover student age and sex, grade level, school attended, linguistic status, mother tongue, language of instruction and type of certification. Among other things, they make it possible to measure non-certification of studies and academic delay on entering secondary school.

All available observations on the group under examination were retained in this study. For example, for the 2001-2002 academic year, 438 224 observations were available, representing all students in the Secondary I to Secondary V years of youth-sector general education.

The data on the ministerial examinations in the language of instruction are from the SÉSAME database, and the variables concerning student paths are from the DCS (Déclaration de la clientèle scolaire) database.

The characteristics of the last school attended were considered for each student and academic year.

The analysis of the data for each academic year takes all students into consideration, but does not distinguish between students already enrolled in the Québec school system and new arrivals (immigrants.) Data by grade level or cycle on students who leave the system and, in particular, on students who leave without a diploma or other qualification, take into account those who drop out permanently or temporarily, but also those who move outside Québec or leave for a variety of other reasons (death, sickness, home schooling, etc.).

Validation

Three observation years, namely, the 1999-2000, 2000-2001 and 2001-2002 school years, were analyzed to verify the validity of the indicators selected. This led to the conclusion that, although annual averages for the indicators sometimes rose or fell, the gaps between boys from various backgrounds, and between boys and girls, remained relatively similar from one year to another. To simplify the processing and presentation of the results, only the data from the most recent year, 2001-2002, were selected for this report; but there is no reason to believe that the conclusions would have been any different for either of the other two years. Nevertheless, the overall results are presented to illustrate certain emerging trends.

When the results contradicted expectations, they were verified using data from years prior to 2001-2002, to ensure that no erroneous conclusions were presented.

Of the two possible socioeconomic indicators, the low-income cut-off (LICO) indicator and the socioeconomic environment (SEEI) indicator, the latter was selected. An initial examination of the relationship between the indicators and the deciles showed that the SEEI was more stable, since it produced fewer interruptions in the linear relation between the deciles and the indicators than did the LICO indicator.

Analysis

It is important to point out that the data used were compiled not from a sample but from a census covering the entire population. This situation eliminated the need to carry out statistical tests to verify whether the differences were significant. In a census, any difference is necessarily significant.

No data is presented when there were fewer than 30 observations for a given cell. This approach, although conservative, produces reliable results. With regard to so-called significant deviations, subjective appreciation and knowledge of the field were the only means used to conclude as to significance.

However, in cases where the number of observations appeared insufficient to produce solid, reliable results, some statistical analysis, including frequency analysis, was carried out to assess whether the data observed were specific to a given student cohort (significance of 5%.)

The data processing was limited to bi-variable analysis, by the comparison of two variables. This means that the analysis is essentially based on a comparison of frequency distributions. Some of the relationships between the variables studied may be discovered, without necessarily indicating a causal relationship.

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