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ABSTRACT

This annual report presents data for the entire province of Alberta (Canada) for the 1992-93 school year, combining the January, June, and August examinations. Results are also summarized by gender, population subgroup, and achievement-over-time. The Grade 12 Diploma Examinations Program, established in 1984, has three main purposes: (1) to certify the level of individual student achievement in selected grade-12 courses; (2) to ensure that province-wide standards of achievement are maintained; and (3) to report individual and group results. Eight grade-12 courses in English, French, social studies, mathematics, and the sciences have Diploma examinations. In 1992-93 the number of students taking examinations continued to increase. Over 90% achieved the acceptable standard in each course except for the mathematics course. Over 20% of science students achieved the standard of excellence. Graduating students spell quite well, but have problems with syntax and semantics. Results are summarized in 29 tables and 33 figures. Four appendixes describe the examination development process, test interpretation, and distribution of marks, and contain the report questionnaire. (SLD)

1992-93 School Year

Annual Report

Diploma Examinations Program

Students First! Student Evaluation

Alberta EDUCATION

1992-93 School Year

Annual Report

Diploma Examinations Program

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This document was written primarily for:

Students	
Teachers	✓
Administrators	✓
Parents	
General Public	
Others (Specify)	Researchers

Distribution: Superintendents of Schools • School Principals and Teachers • The Alberta Teachers' Association • Alberta School Boards Association • Alberta Education • General Public upon Request.

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Message from the Director

Many teachers worked with us during the 1992-93 school year, assisting in exam development, field testing, marking, and the administration of the diploma exams. Superintendents, high school principals, and other school personnel have also helped make the Diploma Examinations Program effective. I appreciate their commitment, and I want to thank them for the support and assistance they have provided.

Our annual report combines the January, June, and August results for diploma exam courses. The graphs, tables, and text describe student performance for the whole school year. As before, we present data for three consecutive years for each diploma exam course. Some other features of the previous report are repeated, including the separate presentation of school marks, exam marks, and final marks for each course, and results by gender.

Our data show that in the 1992-93 school year, the number of students writing diploma exams continued to increase. Final marks in the diploma exam courses showed that over 90% of our students achieved the *acceptable standard* in each course except Mathematics 30. In the science courses, over 20% of students also achieved the *standard of excellence*.

This year's special study reports English 30 students' application of conventions of language. Results of the study are reported in Section 5. The study confirms that English 30 graduating students can spell quite well. The kinds of problems in expression that emerged relate to syntax and semantics. The study suggests a need for students to encounter more examples of language used well, precisely, and correctly.

I hope that you will find this report useful, and I welcome any comments and questions that may arise. Please feel free to call or write to me, or contact any of the Student Evaluation staff. You can also send feedback by completing the questionnaire, which is included at the end of the report. We are committed to communicating the achievement results of our graduating students clearly and in ways that encourage improvements in education.

Frank G. Horvath, Director

Section 1
Grade 12 Diploma Examinations Program

This *Diploma Examinations Program Annual Report* provides province-wide results for the entire school year; that is, for the January, June, and August examinations combined. Additionally, the annual report provides summaries of results by gender, for population subgroups, and for achievement-over-time studies.

Occasional research findings on issues of topical interest related to the program are also featured. In this 1992-93 report, the results of a special investigation into errors in conventions of language on the English 30 diploma examinations are presented.

The Grade 12 Diploma Examinations Program, established in 1984, has three main purposes:

- to **certify** the level of individual student achievement in selected Grade 12 courses
- to ensure that province-wide **standards** of achievement are maintained
- to **report** individual and group results.

The examination development process, described in Appendix A, ensures that this form of assessment provides valid and reliable results. Eight Grade 12 courses have diploma examinations, and five of these* are available in French translation:

- English 30
- English 33
- Social Studies 30*
- Français 30
- Mathematics 30*
- Biology 30*
- Chemistry 30*
- Physics 30*

Diploma examinations are administered in January, June, and August of each school year.

Certification

A student's final mark in a diploma examination course is a fifty-fifty "blend" of the examination mark and the school-awarded mark (except for students with mature status; see Section 4). For example, a diploma examination mark of 57% combined with a school-awarded mark of 45% would produce a **final course mark of 51%**, a "pass" in the course. This student would earn high school graduation credits for the course. The "blending" of the two marks to produce a final course mark recognizes the fact that the diploma examination assesses only those learning outcomes, listed in the *Program of Studies*, that can be effectively measured in a limited time using paper and pencil tests. The school can best assess students' achievement in the laboratory, in research, in oral communication, and in co-operative learning.

Standards

The *Program of Studies* for each diploma examination course outlines what students are expected to know and to be able to do in order to pass the course. Information bulletins published at the beginning of the school year provide details about "how well" students are expected to do, i.e., the bulletins outline the assessment standards for each diploma examination course. Students who achieve the *acceptable standard* of performance receive a final course mark of 50% or higher. Students who achieve the *standard of excellence* receive a final course mark of 80% or higher.

Reporting

The results achieved by students in the Diploma Examinations Program are aggregated at the school, jurisdiction, and provincial levels and are presented in this and three other reports described below. Their purpose is to help school administrators, teachers, trustees, and Alberta Education evaluate the effectiveness of educational programs. Guidelines for interpreting and using these reports are given in Appendix B.

These reports should not be used as the basis for evaluating teacher performance or for comparing performance between schools or jurisdictions.

Percentage Distribution of Marks in Diploma Examination Courses is a three-page report distributed to educators in schools, jurisdictions, and other educational institutions approximately three weeks after the January and June examinations are written. The report is also available to the public on request. The reports issued in 1993 are reproduced in Appendix C.

School and Jurisdiction Reports for each diploma examination course are distributed to superintendents and principals soon after the January and June administrations. These reports provide results at the question and sub-test level for each school and jurisdiction. This information is particularly useful in assessing the strengths and weaknesses of local programs. These reports are available to the public through the superintendent or principal, according to local board policy.

Examiners' Reports for each course, which are distributed at the same time as the *School and Jurisdiction Reports*, are written primarily for teachers. Provincial results are provided in relation to course standards as reflected in the examination blueprint and information bulletins. The collected January and June 1993 *Examiners' Reports* are published in a separate volume, which is available on request.

Section 2
Summary of Results

This section provides the overall results and describes certain broad characteristics of the student population that wrote the diploma examinations.

The following questions will be answered:

- What percentage of students attained the *acceptable standard* or the *standard of excellence* according to criteria set by Alberta Education?
- How many students wrote each diploma examination and how do these numbers compare with the previous two years?
- What was the average number of different diploma examinations written by each student in each course during the 1992-93 school year?
- What was the distribution of A, B, C, and F for each diploma examination course and how does this distribution compare with distributions of previous years?
- For each diploma examination course, what is the correlation between examination marks and school-awarded marks?

What percentage of students attained the *acceptable standard* or the *standard of excellence* according to criteria set by Alberta Education?

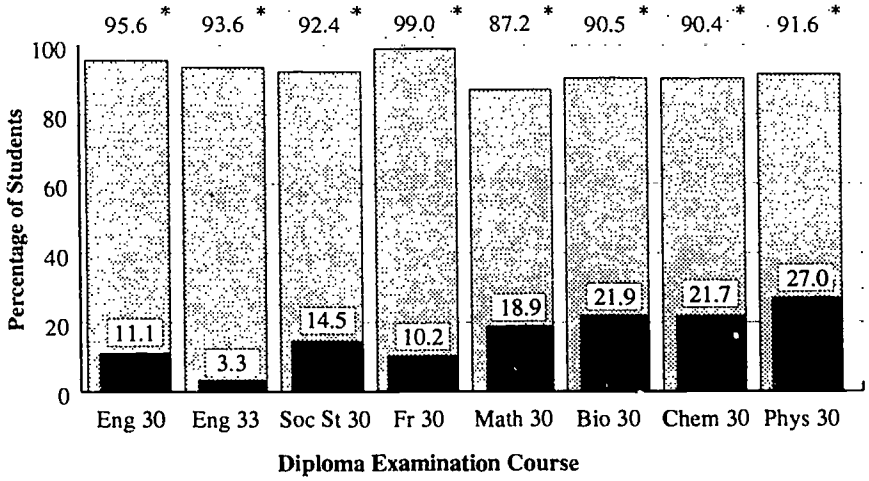
Figure 2-1 shows the percentage of students achieving the *acceptable standard* and the *standard of excellence* based on the final course mark. The "final course mark" is the average of the school-awarded mark and the diploma examination mark or as otherwise provided by Alberta Education policy.

During the 1992-93 school year, final course marks showed that in all courses except Mathematics 30, more than 90% of students achieved the acceptable standard. A high percentage of students also achieved the standard of excellence in the sciences.

In Alberta, courses are selected by students according to their own needs, aspirations, and expectations. This may account for much of the differential achievement among courses. For this reason, expectations of the percentage of students who achieve the *acceptable standard* or the *standard of excellence* are best interpreted in the context of local policies and conditions.

Figure 2-1

Percentage of Students Achieving Standards (Final Course Mark)
1992-93 School Year



Students achieving the *acceptable standard.*

Students achieving the *standard of excellence* (final course mark of 80% to 100%).

*The percentage of students achieving the *acceptable standard* (final course mark of 50% to 100%).

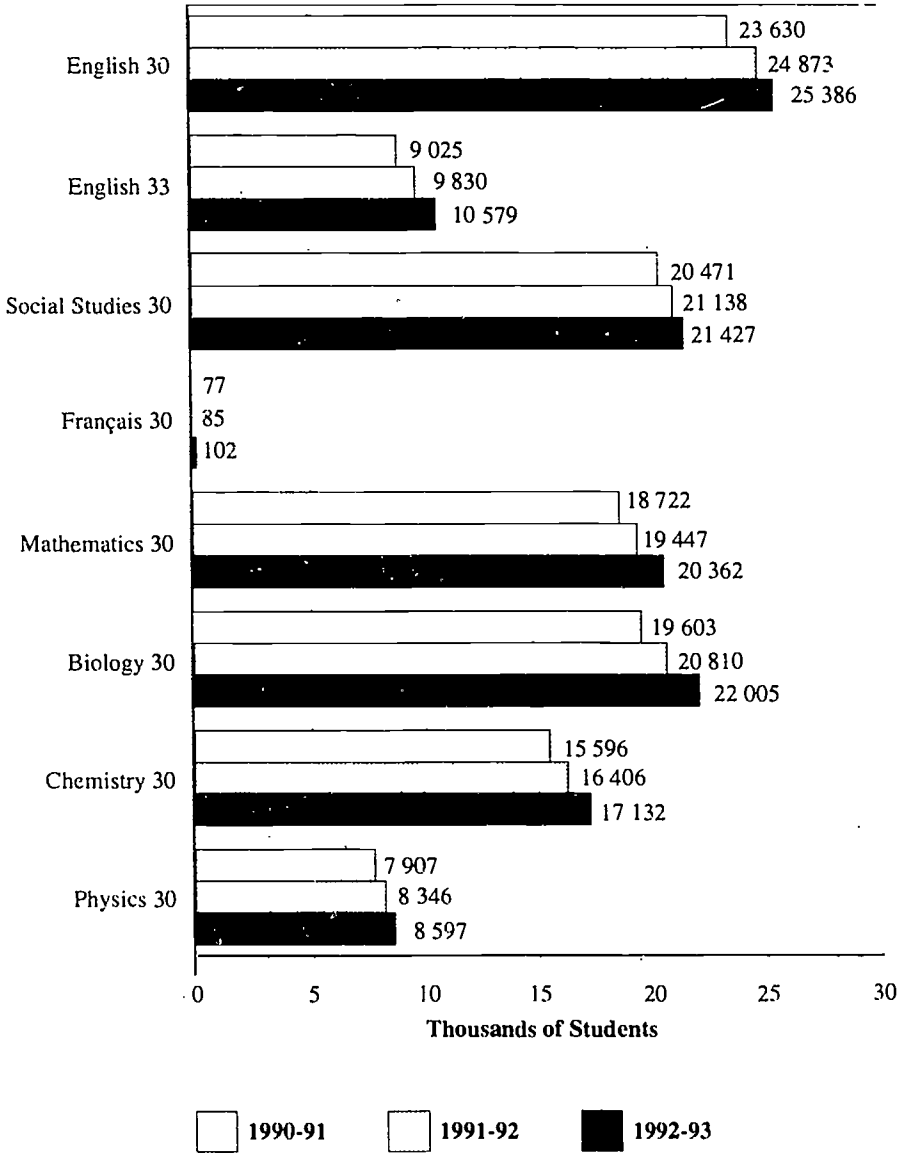
How many students wrote each diploma examination and how do these numbers compare with the previous two years?

As shown in Figure 2-2, the number of students writing each diploma examination increased consistently during the last three years. In 1992-93 English 30 has the highest number, followed by Biology 30 and Social Studies 30. In terms of absolute numbers, the increase in 1992-93 over 1991-92 is greatest in Biology 30 (an increase of 1 195 students).

Note: All students who wrote more than one diploma examination in a course during a single year are counted only once. Students who wrote examinations in the same course in different years are counted once in each year that they wrote. Students from the Northwest Territories are not included in these counts. Because Figure 2-2 includes students who were not given a school mark, the numbers are slightly higher than in the figures on pages 5 to 8.

Figure 2-2

Number of Students Writing Diploma Examinations in Each Course 1990-91, 1991-92, and 1992-93 School Years



What was the average number of different diploma examinations written by each student in each course during the 1992-93 school year?

As shown in Figure 2-3, the average number of different diploma examinations written by students ranged from a low of 1.6 for students writing the English 33 examination to a high of 5.0 for students writing the Français 30 examination.

What was the distribution of A, B, C, and F for each diploma examination course and how does this distribution compare with distributions of previous years?

The distribution of A, B, C, and F for each course is shown in figures 2-4 to 2-19.

There are two graphs for each course. The first shows the distribution for final course marks over the last three years.

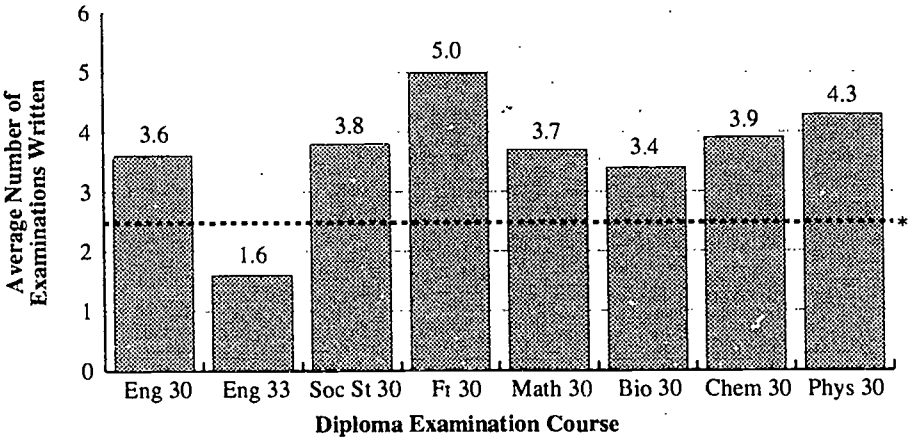
The distributions remained relatively unchanged over time for all courses.

The second of the two graphs shows the 1992-93 school year distribution of A, B, C, and F for the school-awarded mark, the diploma examination mark, and the final course mark.

For example, the awarding of F to English 33 students for the final course mark is much lower than the awarding of F for either the school-awarded mark or the diploma examination mark. One reason for this is that no final marks of 48% or 49% are awarded. If the average of the school-awarded mark and the diploma examination mark is 48% or 49%, the student is automatically given 50% as a final mark.

Figure 2-3

Average Number of Different Diploma Examinations Written by Students in Each Course 1992-93 School Year



*------ Average number of different diploma examinations written by all students (2.5). This average is the same as in 1991-92.

Figure 2-4

English 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

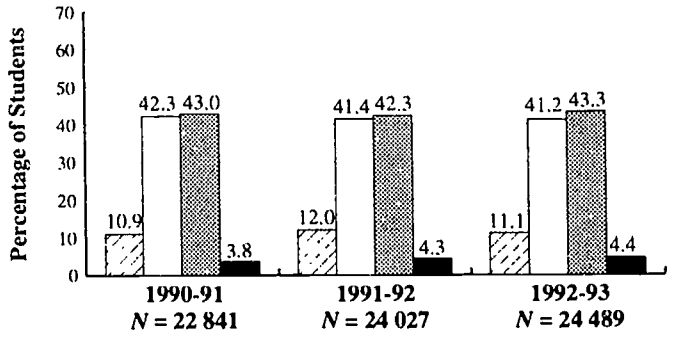
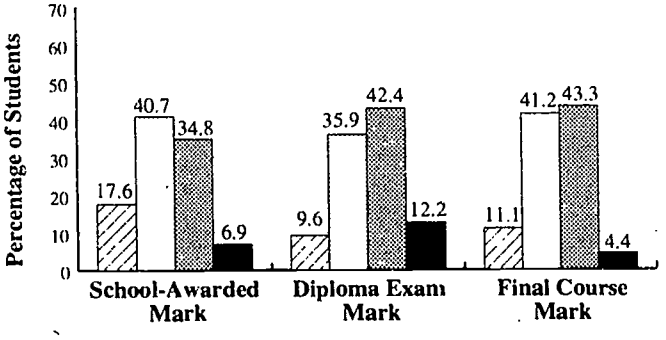


Figure 2-5

English 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



A is 80-100%
B is 65-79%
C is 50-64%
F is 0-49%

Figure 2-6

English 33
Distribution of A, B, C, and F for Final Course Mark Three School Years

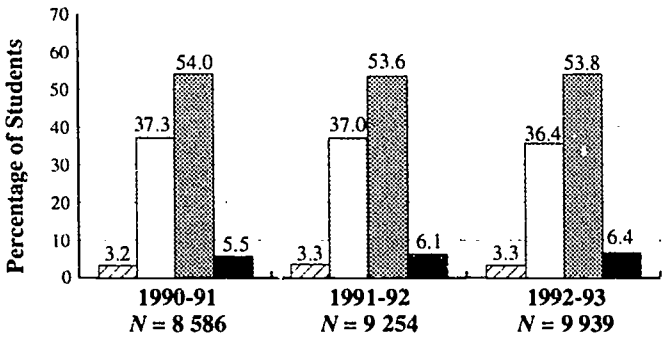
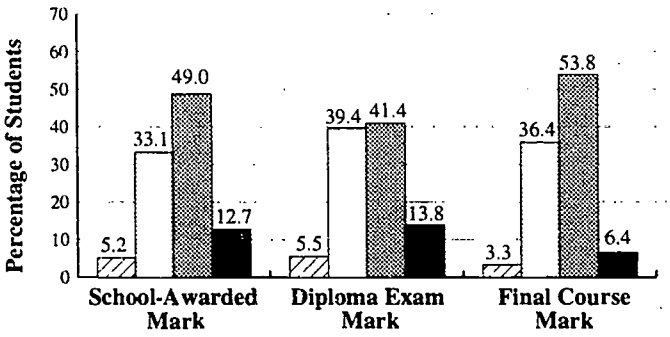


Figure 2-7

English 33
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 9 939

Figure 2-8

Social Studies 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

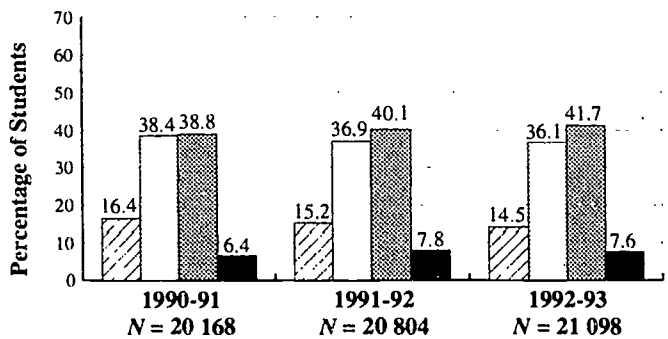
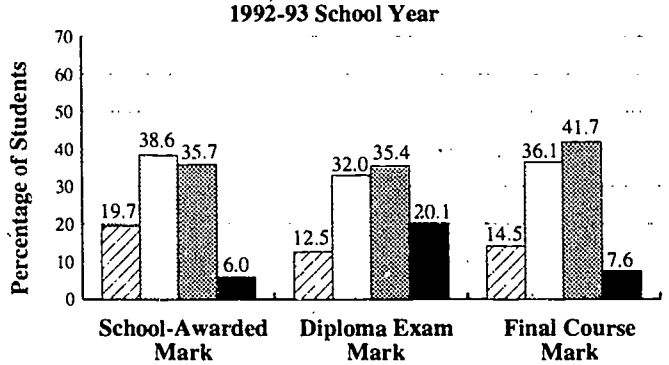


Figure 2-9

Social Studies 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 21 098

Figure 2-10

Français 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

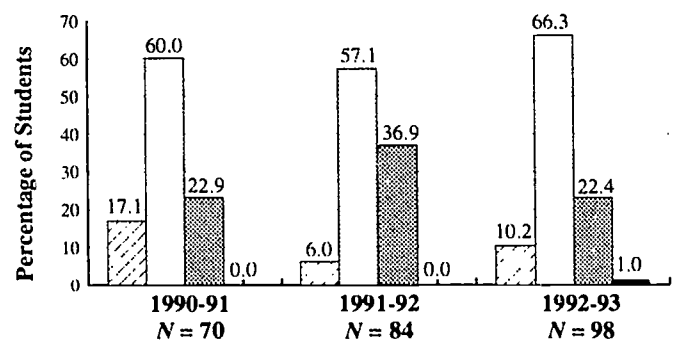
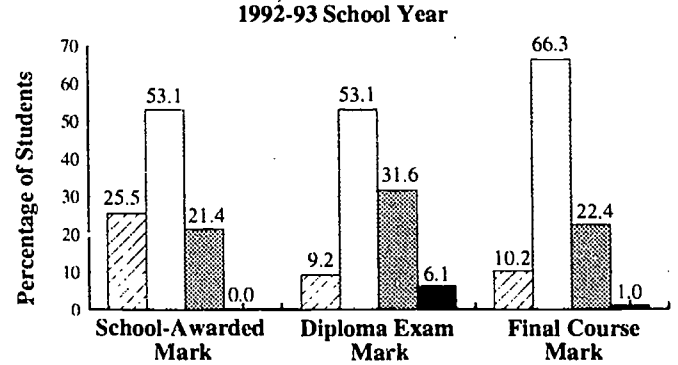


Figure 2-11

Français 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 98

A is 80-100% B is 65-79%
C is 50-64% F is 0-49%

Figure 2-12

Mathematics 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

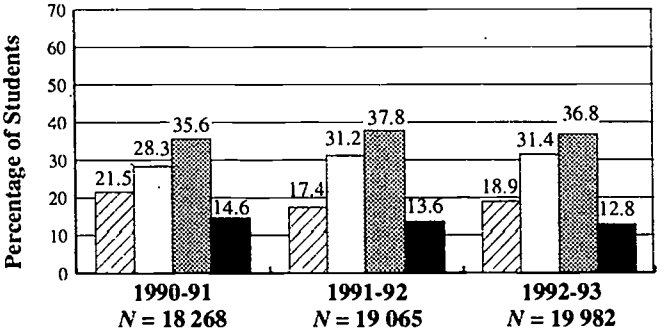
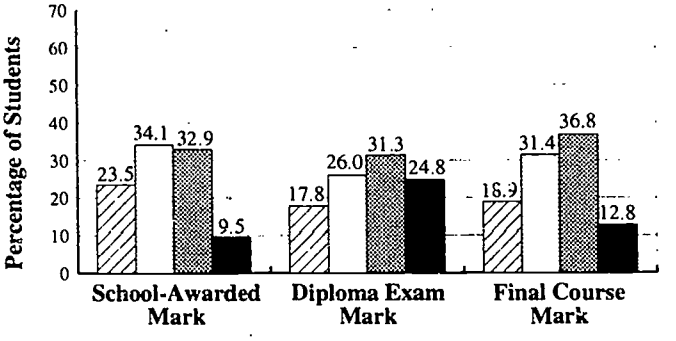


Figure 2-13

Mathematics 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 19 982

Figure 2-14

Biology 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

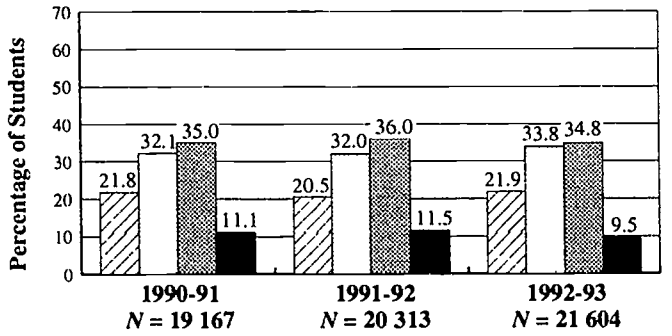
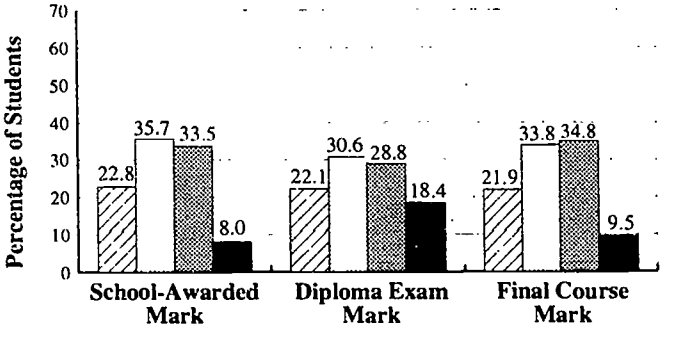


Figure 2-15

Biology 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 21 604

Figure 2-16

Chemistry 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

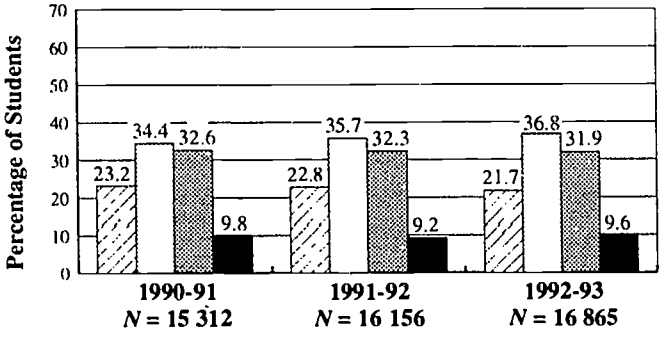
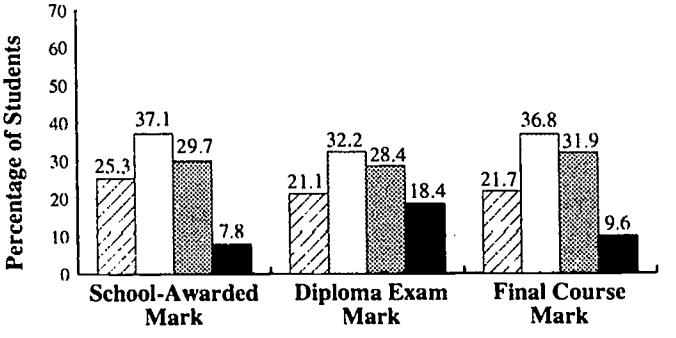


Figure 2-17

Chemistry 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



N = 16 865

A is 80-100% B is 65-79%
C is 50-64% F is 0-49%

Figure 2-18

Physics 30
Distribution of A, B, C, and F for Final Course Mark Three School Years

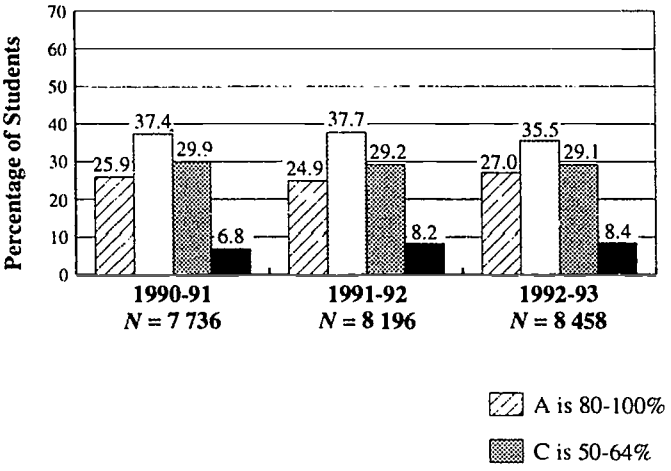
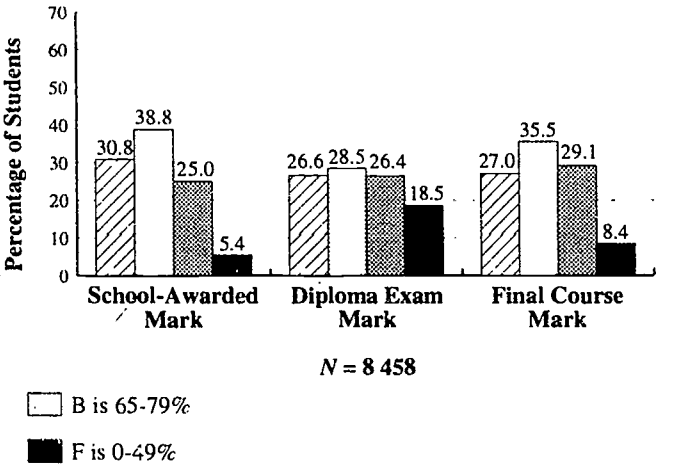


Figure 2-19

Physics 30
Distribution of A, B, C, and F for School, Examination, and Final Course Marks 1992-93 School Year



A is 80-100%
B is 65-79%
C is 50-64%
F is 0-49%

For each diploma examination course, what is the correlation between examination marks and school-awarded marks?

Table 2-1 presents the correlation between diploma examination marks and school-awarded marks for each diploma examination course.

The two marks represent two separate assessments of achievement, each based on an overlapping yet different set of curricular objectives. To a large degree, these objectives are similar; however, there is a necessary degree of difference.

The diploma examinations are limited to measuring achievement of objectives that can be effectively assessed by paper and pencil tests. School assessments also measure achievement of additional objectives such as laboratory skills in the sciences, or speaking and listening skills in English. Therefore, these correlations are expected to be positive and relatively high, but less than 1.0.

Other factors that contribute to the less-than-perfect correlations include variations among teachers' assessment practices, the longer time span of school-based assessment, the effect of failure to complete assignments, and the individual student's approach to the different types of assessment.

Table 2-1

Correlation of Diploma Examination Marks and School-Awarded Marks by Course 1992-93 School Year

Course	Number of Students	Correlation Coefficient
English 30	24 489	0.628
English 33	9 939	0.376
Social Studies 30	21 098	0.769
Français 30	98	0.627
Mathematics 30	19 982	0.777
Biology 30	21 604	0.821
Chemistry 30	16 865	0.799
Physics 30	8 458	0.789

Section 3
Results by Gender

This section of the report provides separate results for males and females. These questions will be answered:

- What proportion of males and females registered in Grade 12 write diploma examinations?
- Is the percentage of males and females who meet the standards the same in each course?
- Are males and females awarded similar school marks? Is the pattern the same for diploma examination marks?

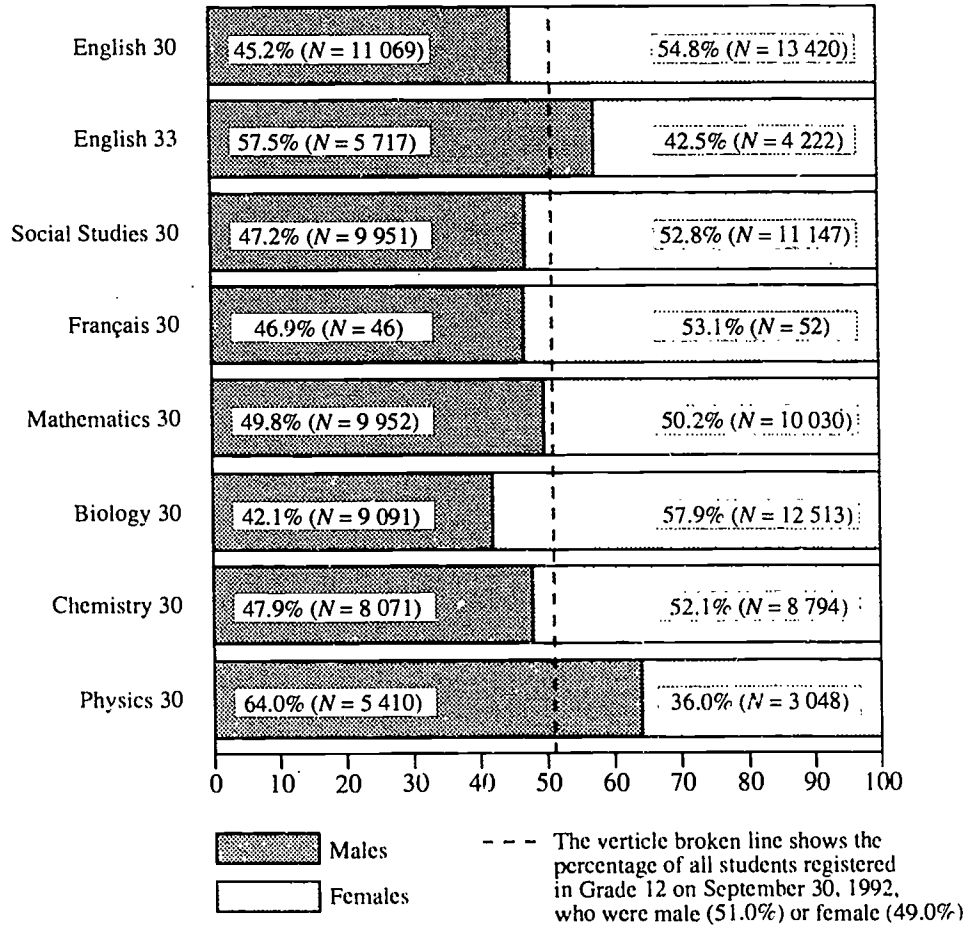
What proportion of males and females registered in Grade 12 write diploma examinations?

Figure 3-1 shows that when compared to the percentage of males registered in Grade 12, a smaller proportion of males wrote diploma examinations in all courses except for English 33 and Physics 30. Although males make up 51 percent of the Grade 12 enrollment only 49 percent of those receiving a high school diploma and only 48 percent of those earning an Advanced High School Diploma are male. The reasons for this under-representation of males among students writing most diploma examinations and among diploma recipients cannot be determined from the available data. Schools that wish to explore this relationship further could look at:

- the percentage of males and females seeking a high school diploma
- the percentage of males and females returning to school for a fourth year of high school and in which courses they are enrolling
- the percentage of males and females who register in a course but drop the course before writing a diploma examination.

Figure 3-1

Ratio of Males to Females Writing Diploma Examinations
1992-93 School Year



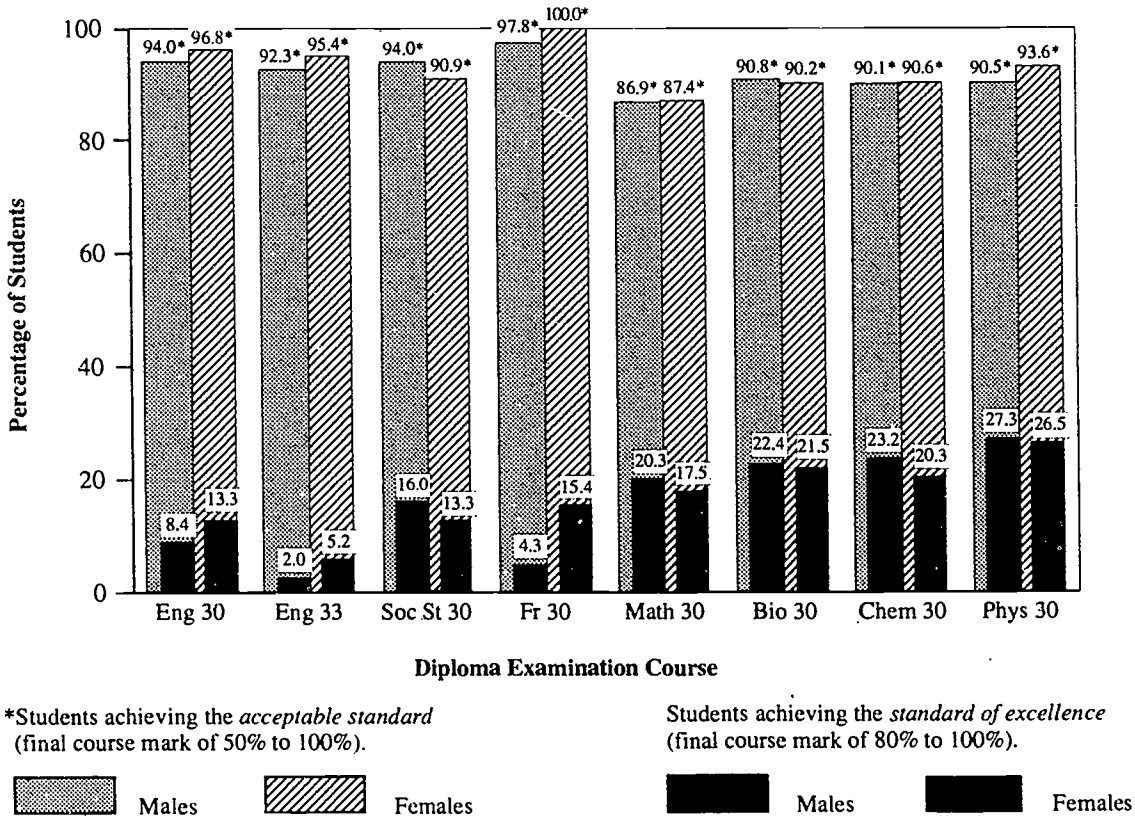
Is the percentage of males and females who meet the standards the same in each course?

Figure 3-2 shows that a higher percentage of males achieved the *standard of excellence* in their final course marks for all science courses, Mathematics 30 and Social Studies 30.

A higher percentage of females achieved the *standard of excellence* in their final course marks in English 30 and English 33. The percentage of females who achieved the *acceptable standard* exceeded the percentage of males in all courses except for Social Studies 30 and Biology 30.

Figure 3-2

Percentage of Students Achieving Standards by Gender (Final Course Mark) 1992-93 School Year



Number of Students

Course	Achieving the Acceptable Standard			Achieving the Standard of Excellence		
	Male	Female	Total	Male	Female	Total
English 30	10 407	12 994	23 401	930	1 779	2 709
English 33	5 277	4 028	9 305	113	219	332
Social Studies 30	9 350	10 137	19 487	1 590	1 479	3 069
Français 30	45	52	97	2	8	10
Mathematics 30	8 649	8 770	17 419	2 025	1 758	3 783
Biology 30	8 259	11 283	19 542	2 035	2 687	4 722
Chemistry 30	7 268	7 971	15 239	1 874	1 787	3 661
Physics 30	4 894	2 852	7 746	1 476	809	2 285

Are males and females awarded similar school marks? Is the pattern the same for diploma examination marks?

Table 3-1 shows the results of a study of the school-awarded marks and diploma examination marks for males and females. When averages in school-awarded marks are compared, females achieved similar or higher averages than males in all courses. The percentage of females achieving an F was either smaller or not significantly different from the percentage for males. However, a smaller percentage of females than males achieved an A in Mathematics 30 and Chemistry 30.

In diploma examination marks, females achieved lower averages in Social Studies 30, Mathematics 30, Biology 30, and Chemistry 30. A smaller percentage of females achieved an A on all diploma exams except for English 30, English 33, and Français 30.

Noteworthy differences between males and females occurred in English 30, Français 30, and Social Studies 30. In English 30, 21.7% o. females achieved an A based on school-awarded marks but only 12.7% of males achieved an A. On the diploma examination the difference narrowed, with 11.1% of females and 7.8% of males achieving an A. In Social Studies 30, even though similar percentages of males and females achieved an F in school-awarded marks, 24.1% of the females compared with 15.5% of males achieved an F in diploma examination marks.

In Français 30, 40.4% of the females achieved an A in school-awarded marks compared with 8.7% of males. Females and males showed a similar pattern of differences in the percentage achieving an A on the diploma examination.

Table 3-1
Provincial Percentage Distribution of A, B, C, and F, Average, and Standard Deviation* of Scores
1992-93 School Year

Course	School-Awarded Mark			Diploma Exam Mark			Final Course Mark		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
English 30									
A (80-100%)	17.6	12.7	21.7	9.6	7.8	11.1	11.1	8.4	13.3
B (65-79%)	40.7	38.1	42.8	35.9	34.1	37.3	41.2	37.9	43.9
C (50-64%)	34.8	39.8	30 8	42.4	44.5	40.7	43.3	47.7	39.7
F (0-49%)	6.9	9.4	4.8	12.2	13.7	10.9	4.4	6.0	3.2
Average (%)	66.7	64.4	68.6	63.3	62.2	64.2	65.5	63.9	66.8
Standard Deviation (%)	12.5	12.6	12.1	11.9	11.9	11.9	11.0	10.8	10.9
English 33									
A (80-100%)	5.2	3.5	7.6	5.5	3.9	7.6	3.3	2.0	5.2
B (65-79%)	33.1	26.1	42.5	39.4	37.6	41.8	36.4	30.8	44.1
C (50-64%	49.0	54.2	41.9	41.4	43.4	38.7	53.8	59.6	46.1
F (0-49%)	12.7	16.2	8.0	13.8	15.1	11.9	6.4	7.7	4.6
Average (%)	60.7	58.5	63.7	62.3	61.4	63.5	62.0	60.4	64.1
Standard Deviation (%)	11.4	11.2	11.1	11.4	11.1	11.6	9.6	9.2	9.6
Social Studies 30									
A (80-100%)	19.7	19.8	19.6	12.5	14.8	10.5	14.5	16.0	13.3
B (65-79%)	38.6	39.2	38.0	32.0	35.1	29.3	36.1	38.3	34.2
C (50-64%	35.7	35.0	36.3	35.4	34.5	36.1	41.7	39.7	43.5
F (0-49%)	6.0	5.9	6.1	20.1	15.5	24.1	7.6	6.0	9.1
Average (%)	67.3	67.5	67.2	62.4	64.3	60.6	65.2	66.3	64.2
Standard Deviation (%)	12.5	12.4	12.5	14.3	13.9	14.4	12.6	12.4	12.7

(Continued)

*Standard deviation is an indication of the amount of variation in a distribution. About 68% of the students' marks will fall within plus or minus one "standard deviation" of the average mark. On the English 30 Diploma Examination, for example, 68% of students who wrote the examination scored between 51.4% and 75.2%.

Table 3-1 (*continued*)

Course	School-Awarded Mark Total	Male	Female	Diploma Exam Mark Total	Male	Female	Final Course Mark Total	Male	Female
Français 30*									
A (80-100%)	25.5	8.7	40.4	9.2	4.3	13.5	10.2	4.3	15.4
B (65-79%)	53.1	67.4	40.4	53.1	56.5	50.0	66.3	65.2	67.3
C (50-64%	21.4	23.9	19.2	31.6	30.4	32.7	22.4	28.3	17.3
F (0-49%)	0.0	0.0	0.0	6.1	8.7	3.8	1.0	2.2	0.0
Average (%)	72.2	69.5	74.6	65.9	64.6	67.1	69.3	67.3	71.1
Standard Deviation (%)	9.4	8.3	9.8	10.5	9.6	11.1	9.1	8.4	9.3
Mathematics 30									
A (80-100%)	23.5	24.2	22.9	17.8	19.6	16.0	18.9	20.3	17.5
B (65-79%)	34.1	32.6	35.5	26.0	26.6	25.5	31.4	31.0	31.9
C (50-64%	32.9	32.7	33.0	31.3	30.2	32.5	36.8	35.6	38.0
F (0-49%)	9.5	10.5	8.6	24.3	23.5	26.1	12.8	13.1	12.6
Average (%)	67.4	67.2	67.5	61.8	62.8	60.9	65.0	65.4	64.6
Standard Deviation (%)	14.4	14.8	14.0	17.6	17.9	17.1	15.1	15.5	14.6
Biology 30									
A (80-100%)	22.8	22.5	23.0	22.1	23.4	21.2	21.9	22.4	21.5
B (65-79%)	35.7	34.0	37.0	30.6	31.5	30.0	33.8	33.7	33.8
C (50-64%	33.5	34.5	32.8	28.8	28.9	28.8	34.8	34.7	34.9
F (0-49%)	8.0	9.0	7.3	18.4	16.2	20.0	9.5	9.2	9.8
Average (%)	67.6	67.1	67.9	65.1	66.0	64.4	66.8	67.0	66.6
Standard Deviation (%)	13.5	13.8	13.2	16.2	16.1	16.3	14.2	14.3	14.1
Chemistry 30									
A (80-100%)	25.3	26.0	24.8	21.1	23.2	19.2	21.7	23.2	20.3
B (65-79%)	37.1	35.6	38.6	32.2	32.4	31.9	36.8	36.0	37.5
C (50-64%	29.7	29.6	29.8	28.4	26.9	29.8	31.9	30.9	32.8
F (0-49%)	7.8	8.9	6.9	18.4	17.5	19.1	9.6	9.9	9.4
Average (%)	68.7	68.5	68.8	64.9	65.8	64.2	67.2	67.6	66.9
Standard Deviation (%)	13.9	14.3	13.4	16.3	16.6	16.0	14.3	14.7	13.9
Physics 30									
A (80-100%)	30.8	29.3	33.4	26.6	27.4	25.2	27.0	27.3	26.5
B (65-79%)	38.8	38.0	40.4	28.5	27.5	30.3	35.5	33.7	38.8
C (50-64%	25.0	25.9	23.4	26.4	26.1	26.8	29.1	29.5	28.2
F (0-49%)	5.4	6.8	2.9	18.5	19.0	17.7	8.4	9.5	6.4
Average (%)	70.9	70.1	72.4	66.3	66.2	66.4	69.0	68.6	69.7
Standard Deviation (%)	13.4	13.9	12.2	17.5	17.9	16.9	14.7	15.1	13.8

Summary

There are gender differences in the marks obtained for the diploma examination courses. A larger proportion of females than males are writing the diploma examinations and obtaining a high school diploma. Although the achievement of females is similar to or higher than the achievement of males in school-awarded marks, their achievement on many of the diploma examinations is below the achievement of males.

Since individual jurisdiction results will show patterns that differ from the province-wide results, school boards are encouraged to explore gender differences in their own jurisdictions.

The data presented in this section show gender differences to a greater or lesser degree in all diploma examination courses. Schools should consider these results carefully within their own contexts.

We welcome any comments regarding observations or thoughts you have on gender differences in achievement. If you would like to share your thoughts with us, please contact Elana Scraba, Assistant Director, Humanities Diploma Examinations Program, at 427-0010 or write to her at Student Evaluation Branch, Alberta Education, 11160 Jasper Avenue, Edmonton, Alberta, T5K 0L2.

*Because very few students wrote the Français 30 examinations, results must be interpreted with caution.

Section 4
Results for Population Subgroups

The majority of students who wrote the 1992-93 diploma examinations took the course in school as regular students; the second largest group were mature students* with current school-awarded marks. Results for students with both school-awarded marks and diploma examination marks are reported in sections 2 and 3 of this report. This section reports the results for all students, *including those with no school-awarded marks.*

This section will answer these questions:

- Does the percentage of mature students writing diploma examinations vary across courses?
- How does the performance of mature students with current school-awarded marks compare with the performance of regular students with current school-awarded marks?
- How does the performance of students with school marks brought forward compare with the results of students with current school-awarded marks?
- How does the performance of mature students challenging the examination compare with the performance of other mature student subgroups?
- For subgroups with both school-awarded marks and diploma examination marks, how does the diploma examination mark average compare with the school-awarded mark average?

Subgroup Definitions

Subgroups are defined by a combination of mature student status and school-awarded mark status. Students in all subgroups have a current diploma examination mark. The subgroups are:

- **Regular School**: students with a current school-awarded mark. This group is comprised of regular students and mature students:

  Regular Students: students without mature status who have a current school-awarded mark

  Mature Students: students with mature status who have a current school-awarded mark

- **Regular Students, School Mark Brought Forward**: regular students who do not have a current school-awarded mark but have an earlier school-awarded mark.

- **Mature Students, School Mark Brought Forward**: mature students who do not have a current school-awarded mark but have an earlier school-awarded mark.

- **Mature Students, Challenging Examination**: students with mature status who have no school-awarded mark.

- **Regular Students, No School Mark**: regular students who have no school-awarded mark.

Note:

1. Mature students "challenging" a diploma examination do not take the course but receive course credit if they pass the examination; regular students with no school-awarded mark receive no course credit.

2. When a mature student earns a diploma examination mark that is higher than that student's school-awarded mark, the diploma examination mark becomes the final mark; otherwise, the normal blending is applied to calculate the final mark.

Excluded Groups

Not included in any of the subgroups are students who were exempted from all or part of the examination or who wrote a substantially different form of the examination because of special considerations. Students in English 30 or English 33 who, by special permission, wrote the two parts of the examination in two different examination sittings (e.g., January and June) are also excluded. Very few students fall into these categories.

Results for Français 30 are not included because of the small number of students writing the examination.

Results

Three tables are provided for each diploma examination course. In the first table are the number and percentage of regular and mature students writing. In the second table are the number of students in each subgroup, their average diploma examination mark, and standard deviations of diploma examination marks for all subgroups. The third table provides data for subgroups with school-awarded marks. It includes the number of students in each subgroup, their average school-awarded mark, and the standard deviation of school-awarded marks for these subgroups.

* A student with mature status is one who, as of September 1 of the current school year, is 20 years of age or older *or* is 19 years of age and has been out of school for eight consecutive months since reaching the age of 18 *or* is the holder of a previously awarded Alberta high school diploma or equivalent (see the *Guide to Education, Senior High School Handbook, 1992-93*, page 75).

English 30: 1992-93 School Year

Achievement in English 30 by subgroups is compared in tables 4-1 to 4-3. About one in five English 30 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, regular students achieved higher averages in both school-awarded marks and diploma examination marks than did mature students.

Among all subgroups, regular students with current school-awarded marks achieved the highest average in diploma examination marks while mature students with school marks brought forward achieved the lowest average.

Table 4-1

English 30
Status of Students Writing

Type	Number	Percentage
Regular Students	20 293	79.9
Mature Students	5 093	20.1
Total	25 386	100.0

Table 4-2

English 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	23 512	63.4	11.9
Regular Students	19 412	64.0	11.8
Mature Students	4 100	60.7	12.4
Regular Students, School Mark Brought Forward	705	62.6	12.0
Mature Students, School Mark Brought Forward	269	55.3	10.3
Mature Students, Challenging Examination	724	59.8	13.9
Regular Students, No School Mark	176	62.4	17.6

Table 4-3

English 30
School-Awarded Marks for Population Subgroups

Subgro···	Number of Students	Average	Standard Deviation*
All Regular School	23 512	66.7	12.5
Regular Students	19 412	67.1	12.3
Mature Students	4 100	64.8	13.1
Regular Students, School Mark Brought Forward	705	67.2	13.1
Mature Students, School Mark Brought Forward	269	66.3	9.6

*For an explanation of standard deviation, please see the footnote to Table 3-1.

English 33: 1992-93 School Year

Achievement in English 33 by subgroups is compared in tables 4-4 to 4-6. About one in six English 33 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, mature students achieved a higher average in school-awarded marks than regular students did; however, regular students achieved a slightly higher average on the diploma examination than mature students did.

Among all subgroups, mature students challenging examinations achieved the highest average in diploma examination marks. Subgroups with school marks brought forward achieved much lower averages in diploma examination marks compared with the other subgroups.

Table 4-4

English 33
Status of Students Writing

Type	Number	Percentage
Regular Students	8 700	82.2
Mature Students	1 879	17.8
Total	10 579	100.0

Table 4-5

English 33
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	9 713	62.5	11.2
Regular Students	8 399	62.6	10.7
Mature Students	1 314	61.9	14.0
Regular Students, School Mark Brought Forward	167	54.7	12.6
Mature Students, School Mark Brought Forward	59	48.5	10.9
Mature Students, Challenging Examination	506	64.4	14.5
Regular Students, No School Mark	134	63.7	11.0

Table 4-6

English 33
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	9 713	60.8	11.4
Regular Students	8 399	60.2	11.1
Mature Students	1 314	64.9	12.7
Regular Students, School Mark Brought Forward	167	53.4	10.2
Mature Students, School Mark Brought Forward	59	60.2	11.0

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Social Studies 30: 1992-93 School Year

Achievement in Social Studies 30 by subgroups is compared in tables 4-7 to 4-9. About one in nine Social Studies 30 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, regular students achieved higher averages in both school-awarded marks and diploma examination marks than mature students did.

Among all subgroups, regular students with current school-awarded marks achieved the highest average on the examination. Subgroups with no current school-awarded marks achieved much lower averages in diploma examination marks than regular school subgroups did.

Table 4-7

Social Studies 30
Status of Students Writing

Type	Number	Percentage
Regular Students	18 923	88.3
Mature Students	2 504	11.7
Total	21 427	100.0

Table 4-8

Social Studies 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	20 576	62.6	14.3
Regular Students	18 414	62.9	14.3
Mature Students	2 162	59.8	13.8
Regular Students, School Mark Brought Forward	437	56.1	13.5
Mature Students, School Mark Brought Forward	85	50.7	12.4
Mature Students, Challenging Examination	257	55.6	14.8
Regular Students, No School Mark	72	53.3	17.8

Table 4-9

Social Studies 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	20 576	67.4	12.5
Regular Students	18 414	67.6	12.4
Mature Students	2 162	66.0	12.5
Regular Students, School Mark Brought Forward	437	63.0	12.4
Mature Students, School Mark Brought Forward	85	64.2	10.5

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Mathematics 30: 1992-93 School Year

Achievement in Mathematics 30 by subgroups is compared in tables 4-10 to 4-12. About one in five Mathematics 30 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, regular students achieved higher averages in both school-awarded marks and diploma examination marks than mature students did.

Among all subgroups, regular students with school marks brought forward achieved the highest average on the diploma examination while mature students challenging examinations and regular students with no school marks achieved the lowest averages.

Table 4-10

Mathematics 30
Status of Students Writing

Type	Number	Percentage
Regular Students	16 007	78.6
Mature Students	4 355	21.4
Total	20 362	100.0

Table 4-11

Mathematics 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	19 267	61.8	17.5
Regular Students	15 357	62.6	17.8
Mature Students	3 910	58.9	16.1
Regular Students, School Mark Brought Forward	563	65.1	17.6
Mature Students, School Mark Brought Forward	152	49.7	15.0
Mature Students, Challenging Examination	293	46.8	19.9
Regular Students, No School Mark	87	46.7	19.4

Table 4-12

Mathematics 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	19 267	67.3	14.4
Regular Students	15 357	67.5	14.4
Mature Students	3 910	66.2	14.3
Regular Students, School Mark Brought Forward	563	72.5	14.7
Mature Students, School Mark Brought Forward	152	64.6	13.4

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Biology 30: 1992-93 School Year

Achievement in Biology 30 by subgroups is compared in tables 4-13 to 4-15. About one in five Biology 30 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, mature students achieved a higher average in school-awarded marks than regular students did. These two subgroups achieved virtually the same average in diploma examination marks.

Among all subgroups, students with current school-awarded marks achieved the highest average on the diploma examination.

Mature students with school marks brought forward achieved the lowest average on diploma examination marks.

Table 4-13

Biology 30
Status of Students Writing

Type	Number	Percentage
Regular Students	17 741	80.6
Mature Students	4 264	19.4
Total	22 005	100.0

Table 4-14

Biology 30
Diplo ma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	21 090	65.3	16.2
Regular Students	17 285	65.3	16.3
Mature Students	3 805	65.5	15.5
Regular Students, School Mark Brought Forward	390	57.1	15.4
Mature Students, School Mark Brought Forward	124	54.3	15.1
Mature Students, Challenging Examination	335	57.7	17.9
Regular Students, No School Mark	66	57.1	19.3

Table 4-15

Biology 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	21 090	67.7	13.4
Regular Students	17 285	67.3	13.5
Mature Students	3 805	69.3	13.3
Regular Students, School Mark Brought Forward	390	61.5	14.0
Mature Students, School Mark Brought Forward	124	67.4	11.1

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Chemistry 30: 1992-93 School Year

Achievement in Chemistry 30 by subgroups is compared in tables 4-16 to 4-18. About one in five Chemistry 30 students who wrote the 1992-93 diploma examinations had mature status.

Of students with current school-awarded marks, regular students achieved a higher average in diploma examination marks than mature students did. These two groups achieved virtually the same average in school-awarded marks.

Among all subgroups, regular students with current school-awarded marks achieved the highest average in diploma examination marks. Subgroups with no current school marks, except regular students with school marks brought forward, achieved much lower averages than regular school subgroups did.

Table 4-16

Chemistry 30
Status of Students Writing

Type	Number	Percentage
Regular Students	13 919	81.2
Mature Students	3 213	18.8
Total	17 132	100.0

Table 4-17

Chemistry 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	16 494	65.0	16.2
Regular Students	13 557	65.2	16.5
Mature Students	2 937	64.2	15.1
Regular Students, School Mark Brought Forward	293	63.5	17.5
Mature Students, School Mark Brought Forward	78	52.3	14.8
Mature Students, Challenging Examination	198	52.8	19.5
Regular Students, No School Mark	69	55.5	22.4

Table 4-18

Chemistry 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	16 494	68.7	13.8
Regular Students	13 557	68.7	13.8
Mature Students	2 937	68.5	13.8
Regular Students, School Mark Brought Forward	293	70.3	14.8
Mature Students, School Mark Brought Forward	78	65.1	14.0

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Physics 30: 1992-93 School Year

Achievement in Physics 30 by subgroups is compared in tables 4-19 to 4-21. About one in six Physics 30 students who wrote the 1992-93 diploma examinations had mature status.

For students with current school-awarded marks, regular students achieved higher averages in both school-awarded marks and diploma examination marks than mature students did.

Among all subgroups, regular students with current school-awarded marks achieved the highest average on the diploma examination.

Subgroups with no current school marks, except regular students with school marks brought forward, achieved much lower averages in diploma examination marks than subgroups with current school marks did.

Table 4-19

Physics 30
Status of Students Writing

Type	Number	Percentage
Regular Students	7 115	82.8
Mature Students	1 482	17.2
Total	8 597	100.0

Table 4-20

Physics 30
Diploma Examination Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	8 265	66.5	17.5
Regular Students	6 940	66.9	17.6
Mature Students	1 325	64.2	16.7
Regular Students, School Mark Brought Forward	148	62.8	18.0
Mature Students, School Mark Brought Forward	45	48.6	15.3
Mature Students, Challenging Examination	112	52.1	18.8
Regular Students, No School Mark	27	46.5	22.9

Table 4-21

Physics 30
School-Awarded Marks for Population Subgroups

Subgroup	Number of Students	Average	Standard Deviation*
All Regular School	8 265	71.0	13.4
Regular Students	6 940	71.4	13.3
Mature Students	1 325	68.8	13.5
Regular Students, School Mark Brought Forward	148	68.9	14.0
Mature Students, School Mark Brought Forward	45	65.1	10.0

*For an explanation of standard deviation, please see the footnote to Table 3-1.

Summary

Does the percentage of mature students writing diploma examinations vary across courses?

In 1992-93, the percentage of mature students writing examinations ranged from 11.7% in Social Studies 30 to 21.4% in Mathematics 30. The large percentage of mature students writing the Mathematics 30 examination could, in part, be related to the large number of students who chose to rewrite the Mathematics 30 examination.

How does the performance of mature students with current school-awarded marks compare with the performance of regular students with current school-awarded marks?

In 1992-93, average marks on diploma examinations for regular students with current school-awarded marks was higher than the averages for mature students with current school-awarded marks in all courses except in Biology 30, where the averages for these two groups are virtually the same.

How does the performance of students with school marks brought forward compare with the results of students with current school-awarded marks?

On the 1993 diploma examinations, regular students with school marks brought forward achieved lower averages in all courses except in Mathematics 30 compared to regular students with current school-awarded marks.

Mature students' marks followed a similar trend. In all courses, mature students with school marks brought forward did not do as well as mature students with current school-awarded marks.

How does the performance of mature students challenging the examination compare with the performance of other mature student subgroups?

On the 1993 diploma examinations, the average marks for mature students challenging the diploma examination was higher than the averages for mature students with school marks brought forward but lower than the average marks for mature students with current school marks, with the exception of English 33 and Mathematics 30. They achieved the highest average in English 33 but the lowest average in Mathematics 30.

For subgroups with both school-awarded marks and diploma examination marks, how does the diploma examination mark average compare with the school-awarded mark average?

All subgroups had higher averages in school-awarded marks than in diploma examination marks, with the exception of English 33. In English 33, regular students with current school-awarded marks and regular students with school marks brought forward achieved higher averages in diploma examination marks than they did in school-awarded marks. For all courses, the largest difference between school-awarded marks and diploma examination marks was observed for mature students with school marks brought forward. For this subgroup, in all courses, the diploma examination mark average was more than 10% lower than the school-awarded mark average. In Physics 30, the difference between school-awarded and diploma examination averages was over 15% for this subgroup.

Section 5
Special Study: Conventions of Language

A Study of English 30 Students' Application of Conventions of Language

Everyone who teaches English, and just about everyone who has children in school, has heard the public's belief that graduates of our schools can't spell and/or write correctly. This belief is not new. However, it seems to surface more frequently in uncertain times.

English teachers are also aware that students' skills in expressing complex ideas clearly and correctly are diverse and difficult to alter, and that the issue of correct language is much more intricate than correct spelling. How to teach students to write thoughtfully, precisely, and correctly is the subject of volumes of professional discourse, hours of staff-room debate, and years of red ink on less than adequate student papers.

Of course, the issue of correctness of expression has been a matter for considerable debate and consideration relative to the Diploma Examinations Program. The scoring criteria for the English 30 and English 33 diploma exams (and for the Social Studies 30 diploma exam and the Language Arts/ Language Learning achievement tests) have addressed language correctness within the broader context of other features of writing—organization of ideas, control of style, and, in particular, the quality of thought. As well, the standards for correctness of expression are based on what can reasonably be expected in first-draft work produced under exam conditions.

Because the public and the profession remain concerned about how correctly students can express themselves, the Humanities Diploma Exam staff undertook a study of language correctness in English 30 examination papers written in January and June 1993.

In January 1993, we established a higher standard for *Writing Skills* and *Matters of Convention* in English 33. This standard is now essentially the same as the standard for English 30. What differs is the difficulty of the assigned writing tasks. The consequence of the increase in standard was that, in 1993, markers awarded more scores of 2-Limited for *Matters of Convention* and *Writing Skills* in English 33 than they had in previous years. We did not change the standard in English 30 in 1993, but we did continue to monitor the application of the existing standard.

It was in this context that the Humanities Diploma Exam staff decided to look more closely at correctness of language in English 30 exam papers. We designed a relatively simple quantitative study and proceeded with a trial run in May 1993. The remainder of this section is a description of what we did, a discussion of the resulting data, and some speculation about what the data might mean to classroom practice. This section is an excerpt from a larger study report (see note, page 28).

The Study

The study and its questions were confined to English 30 diploma examination papers written and scored in January and June 1993. The **only** scoring category considered was *Matters of Convention* for the ***Major Assignment: Literature Composition***. The only level of performance studied was **3-Satisfactory** on that scoring category.

For readers who are not familiar with the English 30 Diploma Examination, the assignment requires each student to write a literary essay that discusses a given theme relative to literature that the student selects for discussion. Students are expected to select literature from their English 30 course of study. Teacher-markers score this essay in five categories: *Total Impression*, *Thought and Detail*, *Organization*, *Matters of Choice* (style), and *Matters of Convention* (correctness of grammar, mechanics, spelling, etc.). Each category has a 5-point set of criteria that describes quality (5-Excellent, 4-Proficient, 3-Satisfactory, 2-Limited, and 1-Poor). Work of acceptable quality is awarded 3-Satisfactory. The total mark value of these five categories is 35 marks out of the 50 exam marks. The *Matters of Convention* category contributes 5 of these 35 marks. Students' papers are read and scored independently by three teachers. These scores are combined to produce the student's mark on the essay exam.

Key Questions

We asked four questions to guide the study:

- What kinds of errors in language and expression are common in English 30 papers that received scores of 3-Satisfactory for *Matters of Convention*?
- How many errors of what kind are typical in such papers?
- What is the relative complexity and length of such papers?
- Does the work rated 3-Satisfactory for *Matters of Convention* demonstrate the standard in the criteria?

The Sample

For the study, we selected 160 papers at random from January and June 1993 English 30 papers that had received scores on the **Major Assignment** as follows:

Group One—from all three markers, scores of 3-Satisfactory on all scoring categories*

Group Two—from all three markers, scores of 3-Satisfactory on *Matters of Convention*, but 2-Limited on *Thought and Detail*

Group Three—from all three markers, scores of 3-Satisfactory on *Matters of Convention*, but 4-Proficient on *Thought and Detail*

Most of the papers in the sample were from Group One (100 papers or 59%). We wanted to examine essays that the original markers considered to be within the range of 3-Satisfactory for all categories so that the reviewers would not be distracted by peculiarities of thought and organization.

We included groups two and three in the sample to extend the range of quality of thought in the essays being examined because one of our questions had to do with the relationship between complexity of thought and incidence of error. However, our principal task remained to try to find out how many errors of what kind were most common in essays that the original markers considered generally "Satisfactory."

The Process

In March 1993, we tested a procedure and developed a list of errors that we considered identifiable, likely to occur, and worthy of attention—for example, spelling, subject-verb agreement, pronoun-antecedent agreement, comma splice. Our goal was to have a classification system that would allow each reviewer to classify errors consistently.

Developing this classification list proved more difficult than we had anticipated. Our first draft list of errors did not work because it did not include all of the most common problems. As well, some frequently occurring problems were difficult to label. The errors that were the most difficult to label were *Usage* errors that we eventually called "Wrong Word." These were problems of words being misused—words that have meanings other than what the student could possibly have intended—rather than words that were less than effective or unacceptable choices of diction. By the end of our reading session in May, we had a grid that listed specific errors under six headings: *Sentence Structure/ Construction*, *Punctuation*, *Pronouns*, *Verbs*, *Usage*, and *Spelling*.

In July 1993, a group of five English 30 teachers, all experienced diploma exam markers and confirmers of standards, used the grid of possible errors developed in the May trial to classify the errors in each of the papers selected for the study.

The reviewers applied the grid to several papers to ensure that in all cases they were classifying errors in the same way. As well, they agreed on about what they would consider to be an error. If style manuals did not concur in the acceptability of a particular feature, the reviewers always ruled in favour of the student. For example, because some manuals prefer commas following introductory phrases and others consider this optional, the reviewers did not consider the absence of such commas an error.

The reviewers also estimated the length of each paper and noted the relative complexity of what the student was attempting in the essay. Finally, each reviewer commented on whether or not the paper should have received a score of 3-Satisfactory for *Matters of Convention*.

The Results

In considering results, readers should keep in mind that the reviewers considered only errors—not other features of the students' essays. As well, so that we would have quantitative data, reviewers counted errors. This is **not** a recommended method for dealing with matters of correctness in an instructional setting. Nor is counting errors a consideration for diploma exam marking.

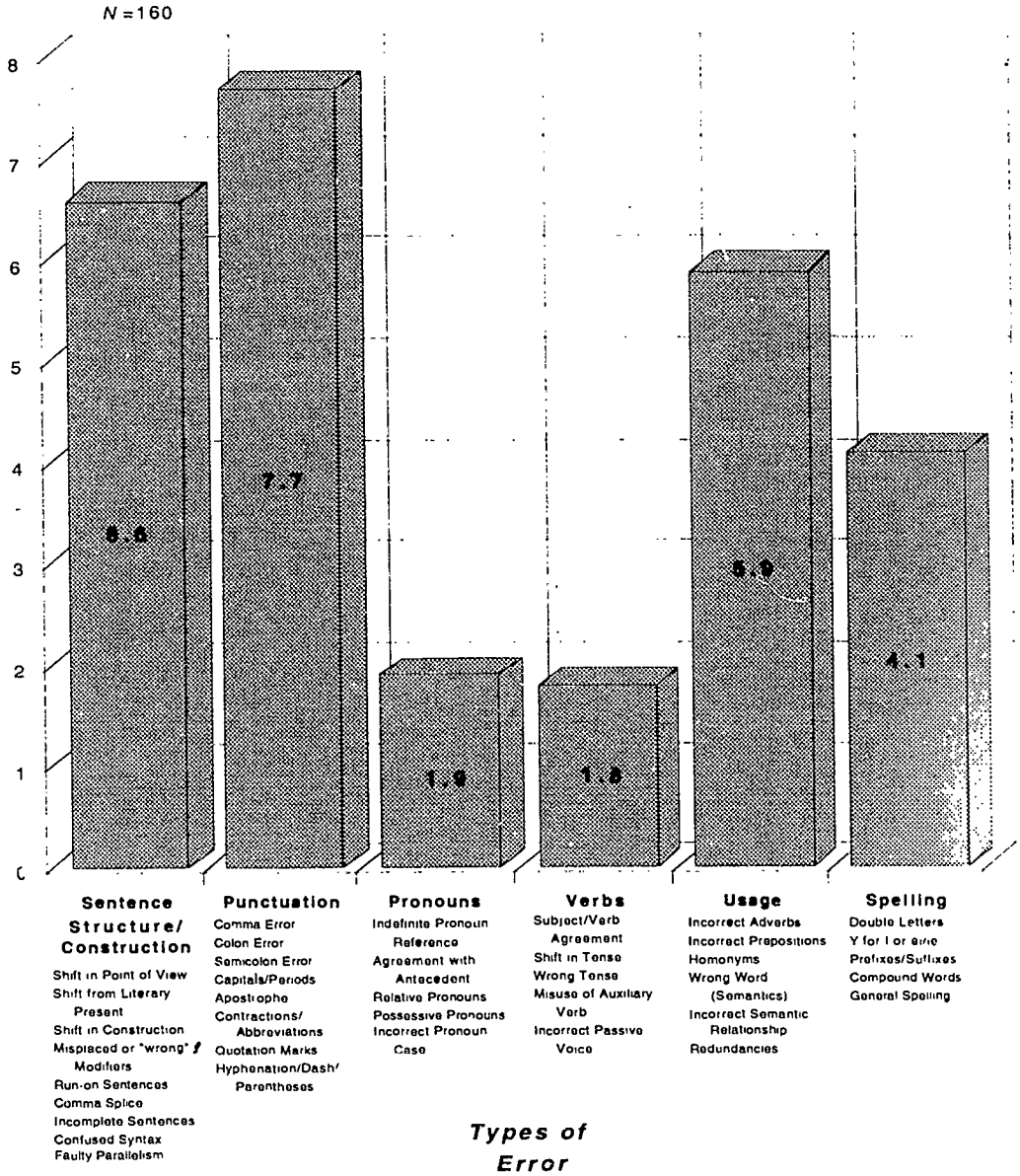
Those problems of expression that we predicted would be common (e.g., pronoun-antecedent agreement, verb problems) proved to be somewhat less frequent and troublesome than we anticipated. Other problems that we had not expected (e.g., confusion of syntax and problems with semantics) emerged as being serious, pervasive, and demanding of attention.

On average, these 3-Satisfactory essays each had 28 errors of varying degrees of seriousness. This appears to be a large number of errors but has meaning only in the context of type of error, and the length and complexity of the essay. In considering the data from this study, readers should keep in mind that it is the nature of the errors rather than simply the number of errors is significant. Although this was a quantitative study, its usefulness lies in the discussions of the qualitative features of the errors that students make.

*Of the 11 339 papers scored in January 1993, only 90 papers (0.79%) received 3-Satisfactory on all major assignment scoring categories from all three markers. Of the 15 224 papers scored in June 1993, 125 (0.82%) received 3-Satisfactory on all major assignment scoring categories from all three markers. This means that markers make distinctions among the categories, and most papers are "uneven" in accomplishment.

Figure 5-1 shows the average number of errors in 3-Satisfactory essays in each of the classification categories. As the figure shows, errors were most frequent in three categories: sentence structure/construction, punctuation, and usage.

Figure 5-1
Average Number of Errors per Essay by Category



Punctuation

The category in which the largest number of errors occurred was *Punctuation*. On average, there were 7.7 punctuation errors in these 3-Satisfactory essays. Comma and apostrophe errors were by far the greatest contributors to problems with punctuation. **Only 7.5% of the essays had no comma errors**, and 45.1% had between 4 and 7 comma errors; 41.3% of the essays had from 1 to 3 apostrophe errors.

Errors in punctuation do not always create problems with communication clarity, and they are relatively easy to correct. However, students do need to be taught how to use punctuation correctly in their own work. As well, they need practice in locating and correcting their own errors.

The frequency of punctuation errors in these essays receiving 3-Satisfactory perhaps suggests a general lack of knowledge of the conventions of print, and perhaps a lack of appreciation of the relationship between punctuation and precise meaning. It is possible that the students who are performing at 3-Satisfactory do not read extensively.

Sentence Structure/ Construction

The category with the second largest number of errors per essay was *Sentence Structure/Construction*. Unlike most errors in punctuation, errors in this category frequently interfere with precise and clear communication. Errors in this category also often suggest muddled thinking, and leave the reader to supply meaning.

Most of the sentence construction errors were errors that the reviewers classified as *Confused Syntax*. **Only 35.6% of the essays had no errors in syntax**; 55% had from 1 to 3 such errors, and almost 10% of the essays had 4 or more syntactical errors.

Addressing confusion in sentence construction is much more complex than addressing punctuation problems. Frequent writing practice that focuses on effectively communicating to readers, practice in reshaping sentences within longer texts to communicate more precisely, and a heightened awareness of readers' needs—all might contribute to correcting this problem. Extensive reading, as well as frequently hearing well-written text, are other key factors that will help in correcting problems with syntax. However, all such "remedies" must begin early in a student's school career and be continuous.

Usage

The next category with significant numbers of errors was *Usage*. Errors in usage averaged 5.9 per essay, and almost all were some version of the use of a word whose meaning could not have been intended. Most of the usage errors were in the category *Wrong Word*. **Only 16.9% of the essays did not have errors of word usage**; 50.7% of the essays had 1 to 3 such errors.

The data show that the ratio of number of usage errors to length is as one might predict: a somewhat higher incidence occurs in longer essays. On average, there were

- 8 usage errors in essays of over 600 words
- 3.3 usage errors in short papers of about 200 to 400 words

However, when complexity is considered, there is a different pattern in the usage errors. Essays that were without *any* complexity of thought, structure, or language still had an average of 3.25 usage errors. Essays of limited complexity—i.e., essays that have single and simple ideas expressed in simple language—had an average of 5.6 usage errors. Essays within the mid-range of complexity of thought, structure, and language averaged 6.6 usage errors. But those essays in which the writer attempted sophisticated analysis had an average of 4.25 usage errors.

These data indicate the predictable relationship between thought and language precision. **When the writer is in control of complex thought and related vocabulary, the incidence of "wrong words" decreases.**

From the reviewers' discussions, markers' comments, confirmers of standards' comments, and staff observations about "problem" papers, we have concluded that this usage/ semantics problem is widespread, serious, and a relatively recent phenomenon.

Length

In addition to tabulating errors according to the categories discussed above, reviewers estimated the length of each essay. Results of these estimates are as follows:

Under 200 words	2.0%
200–400 words	13.0%
400–600 words	45.0%
Above 600 words	40.7%

As could be expected, the incidence of error increased as the length increased. The longer the essay, the more opportunity for error.

Degree of Complexity

Reviewers also indicated the complexity of the substance, language, and structure of each essay and ranked the essays on a 5-point scale for complexity. Of the 160 essays reviewed, only 4 were considered to be highly complex, but 18 were considered to be above average in their complexity.

The incidence of error in the four highly complex papers was considerably lower than in the sample as a whole. The question of the relationship between intricacy of thinking and structure and incidence of error is a difficult one. This study will **not** have served a useful instructional purpose if students are discouraged from attempting sophisticated discussions because they fear making errors. **What is needed is for students to have the skills and knowledge to recognize and correct their own errors, and to present complex discussions that are clear and precise.**

Summary of Most Frequent Errors

Table 5-1 summarizes incidence of the most frequent errors in the essays reviewed. As noted in the preceding discussion, the errors are not of equal weight or impact. The errors that contribute most to confused meaning are errors in syntax, semantics, pronoun reference, and verb tenses. These types of errors are also the most difficult to correct because they are related to thought. **If students lack the vocabulary and syntax through which to convey complex thought, they may lack access to complex thought itself.**

Table 5-1

Most Frequent Errors in Conventions of Language in "Satisfactory" English 30 Diploma Exam Essays

***N* = 160 Papers**

Types of Error	Percentage of papers having: 0 Errors	1–3 Errors	4–5 Errors	6–8 Errors	9–10 Errors	11–20 Errors
Punctuation						
Comma Error	7.5	35.7	26.9	20.1	5.0	4.9
Apostrophe	37.5	41.3	11.2	7.5	1.9	0.6
Sentence Structure/Construction						
Comma Splice	45.0	45.7	6.9	1.9	—	0.6
Confused Syntax	35.6	55.0	6.9	1.2	—	1.2
Usage						
Incorrect Prepositions	45.6	50.1	2.5	1.9	—	—
Wrong Word (Semantics)	16.9	40.7	20.6	9.4	—	2.4
Pronouns						
Indefinite Pronoun Reference	59.4	35.6	5.0	—	—	—
Relative Pronouns	66.3	33.1	0.6	—	—	—
Verbs						
Shift in Tense	64.4	31.3	4.4	—	—	—
Wrong Tense	63.1	35.1	1.9	—	—	—
Spelling						
General Spelling	17.5	46.3	16.3	12.5	5.0	2.5

Immediate Implications of the Study

This study was an English 30 study designed to consider the standard as applied to one of the seven scoring categories used in 1993. The immediate consequence of the study was that the reviewers recommended the scoring guide for *Matters of Convention* be revised. They believed that a more specific guide would help markers to be more accurate in their application of the standard.

The reviewers and a group of teachers who had just completed marking the June 1993 exams drafted a revision immediately upon the completion of the study. The revised criteria for *Matters of Convention* were renamed *Matters of Correctness*, and they are quite specific.

The standard remains the same. However, the committee preparing the revisions believed that the name change will convey more clearly to students what is expected of them.

The committee also believed that the revised wording of the criteria will make appropriate application of the standard easier for markers. These new criteria will be implemented in January 1994, and they are published in the *English 30* and *English 33 Information Bulletins** distributed to schools in September 1993 for use by teachers and students. Teachers' initial responses to the revisions have been very positive.

Conclusions

Although this study was limited, it confirmed many general observations made by teacher-markers, Student Evaluation Branch staff, and classroom teachers. What was confirmed is that, contrary to public opinion, students who completed English 30 can spell quite well even under trying conditions. The kinds of problems in expression that emerged are considerably more troubling than spelling problems because syntactical and semantic problems are not easily "corrected" or readily identified.

Furthermore, the kinds of errors that confuse meaning create more serious havoc than do "surface" or "cosmetic" errors. A student writer who is an able proofreader can find and correct almost all spelling and most punctuation errors. However, if the writer lacks vocabulary and a repertoire of syntactical structures, usage and sentence construction errors are almost impossible to fix.

We can only speculate about the causes of such imprecision in written expression—lack of practice in writing and editing, lack of extensive reading, lack of practice in attending to the meanings of words, lack of hearing the language of print, lack of vocabulary, lack of a repertoire of sentence patterns, etc. It is always tempting to blame television. However, it is likely true that in 1993, we no longer live in a predominantly print culture.

*Note: the criteria in the scoring category Matters of Correctness are identical for English 30 and for English 33. This represents an increase in standard for English 33 and a clarification of the standard for English 30.

This study suggests a need for students to encounter more examples of language used well, precisely, and correctly.

If we want our young people to use language rather than be *manipulated* by it, and if we want them to be able to communicate effectively in many contexts, then we will need to address these goals from early childhood education on. We will have to include a great deal of practice with language—oral, read, written—in all of our language arts programs and in all other subjects. We will also have to emphasize exemplary language in many contexts. This study indicates that we have plenty of work ahead of us.

For the complete report of this study, contact Elana Scraba, Assistant Director, Humanities Diploma Examinations Program, at 427-0010 or write to her at Student Evaluation Branch, Alberta Education, 11160 Jasper Avenue, Edmonton, Alberta, T5K 0L2.

Section 6
Achievement-Over-Time Studies

An important goal of Alberta Education is to answer the question:

Has student achievement, as measured by the diploma examinations, changed over the past few years?

To answer this question, an anchor test technique is used.

Comparing achievement among groups of students requires some common measure. Because new diploma examinations are developed each year, it is not possible to make direct comparisons of achievement from one year to the next. Re-administration of old diploma examinations does not give an accurate indication of changes to student performance since students use old examinations for practice.

Machine-scorable anchor tests are designed and developed to be parallel to the machine-scorable components of each diploma examination. A set of common questions, having the same content and emphasis as the machine-scorable component of the diploma examination, is administered yearly to a sample of students registered to write the diploma examination. We refer to this set of common questions as an 'anchor' test.

Table 6.1 presents the number of students who wrote the anchor tests each year. Only students with current school-awarded and diploma examination marks are included in the samples.

The questions from these anchor tests are not released to the public and are administered again in the anchor tests of subsequent years. Following the administration and scoring of the diploma examinations, a student's anchor test mark is matched with his or her machine-scored mark on a diploma examination.

Results from the anchor tests are compared between yearly administrations and are used to compare achievement on the machine-scorable components of the respective examinations.

In English, only the reading component, which is 50% of the student's examination mark, is compared using this method. A qualitative study, *Patterns and Processes: Approaches to Writing by Grade 12 Students* (1990), reviewed student written work in English 30, Social Studies 30, and English 33.

During the first year of the Achievement-Over-Time Studies, 1989, anchor tests were administered in English 30, English 33, and Social Studies 30. Anchor tests were not administered in Mathematics 30, Biology 30, Chemistry 30, and Physics 30 until June 1990.

For Mathematics 30, no comparisons are made to results for 1991 or earlier because of changes made to the curriculum in 1991.

Equating Procedure

To place the results of different tests on the same scale, all scores are expressed in terms of the results from a baseline year. The baseline year is 1992. A statistical procedure called linear equating is used to equate the results from each diploma examination to the baseline.

The statistical procedure uses the anchor tests and takes into consideration the peculiarities of each sample, such as differing anchor test sample size and differing anchor test

Table 6-1

Number of Students Writing the Anchor Tests

Course	1989	1990	1991	1992	1993
English 30	360	319	297	352	364
English 33	264	298	249	114	305
Social Studies 30	634	464	303	378	327
Biology 30	N/A	405	286	499	353
Chemistry 30*	N/A	160	291	327	300
Physics 30	N/A	74	N/A	224	228
Mathematics 30	N/A	N/A	N/A	444	272

N/A — not applicable in this year. No anchor test was administered.
*Chemistry numbers for prior years have been corrected from previous reports.

sample abilities. The equating procedure allows for the expression of students' scores as if the students had written the diploma examination in the baseline year. That is, by applying the formula derived for English 30 to the mark of a student who wrote the June 1993 English 30 Diploma Examination, it is possible to estimate the mark the student would have received if that student had written the June 1992 examination.

For Physics 30, only the multiple-choice component of diploma examinations was used to equate 1990 results to 1992.

Results

Table 6-2 shows the mean percentage score equated to the 1992 score for the machine-scored component of the diploma examinations. These scores can be used to compare the provincial achievement of each year with that of the baseline year.

Has achievement, as measured by the diploma examinations, changed over the past few years?

- In **English 30,** there is no significant change in the level of student achievement on the machine-scored component of the diploma examination since 1989.
- In **English 33,** the level of achievement on the machine-scored component of the diploma examination has shown no significant change from 1989.
- The 1993, **Social Studies 30** results are significantly better than the results obtained in 1989, 1990, and 1992 but are not statistically different from results obtained by students in 1991.
- For **Biology 30**, student achievement shows no significant change for 1993.
- Results for **Chemistry 30** show no significant difference in achievement between 1993 and 1992.
- In **Physics 30,** the difference in achievement between 1993 and 1992 was found to be not significant.
- For **Mathematics 30,** student achievement for 1993 is significantly improved compared to 1992.

Table 6-2

Equated Average Percentage on the Machine-Scored Component of the Diploma Examinations

Course	1989	1990	1991	1992[1]	1993
English 30	68.5	68.1	68.2	67.5	69.3
English 33	64.2	64.7	63.7	64.2	64.8
Social Studies 30	63.8	64.4	66.4	65.4	68.2[2]
Biology 30	N/A[4]	67.1	65.7	66.6	65.6
Chemistry 30	N/A[4]	68.7	65.4	67.5	66.7
Physics 30	N/A[4]	70.9	N/A[4]	70.5	68.9
Mathematics 30	N/A[4]	N/A[4]	N/A[4]	61 4	65.3[3]

[1] Baseline year: actual percentage on machine-scored component of diploma examination.
[2] Equated mean is significantly larger than mean for 1989, 1990, and 1992 ($p = 0.01$).
[3] Equated mean is significantly larger than mean for 1992 ($p = 0.01$).
[4] N/A indicates that the anchor tests were not administered or not applicable.

Section 7
Examiners' Annual Summary Statements

This section of the report describes for educators how well students met performance standards in the eight diploma examination courses. Each examiners' summary statement addresses three questions:

- What are the characteristics of the student population that wrote the examinations?
- What is the overall performance of students on the examinations?
- Do the population and performance data reveal any significant trends?

Consistent with most of the data presented in sections 3 through 6, the data in this section of the report are based only on the results of students who had both diploma examination and school-awarded marks. Consequently, the figures provided here are slightly different from the figures on pages 3 and 4, which describe a broader sample.

English 30

What are the characteristics of the student population that wrote the examinations?

In 1992-93, 24 489 students with corresponding school-awarded marks wrote the English 30 diploma examinations. This number, representing approximately 71% of all students writing English 30 or English 33 examinations in 1992-93, has increased by 2 276 (10.2%) students since 1989-90.

English 30 is a course "appropriate for students intending to pursue further academic studies" (*Senior High School Language Arts 1982 Curriculum Guide*, page 6). Participation data suggest that a high proportion of students expecting to graduate are attempting to keep their options open with regard to future academic study by enrolling in English 30.

The English 30 population comprises more females than males. About 55% of students writing the English 30 Diploma Examination are female; 45% are male.

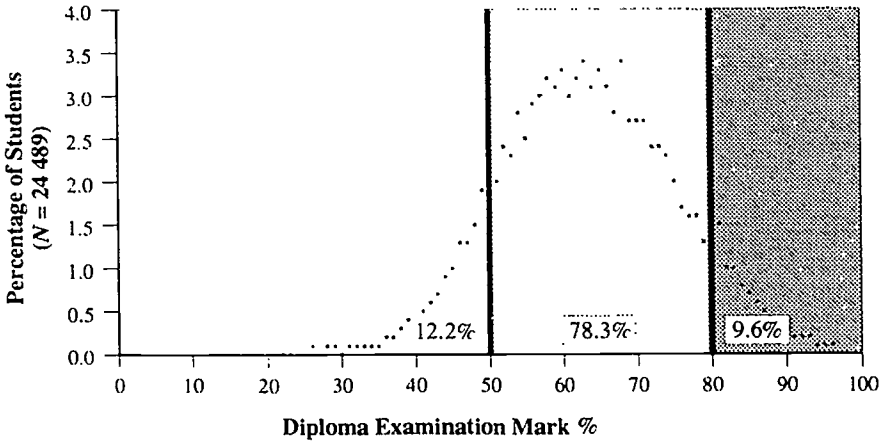
What is the overall performance of students on the examinations?

The overall performance of students writing the English 30 diploma examinations during 1992-93 was similar to performance in previous years. However, in comparison to 1990-91, a slightly higher proportion of students achieved diploma examination marks at or above the *standard of excellence*. Consistency of performance is reflected in achievement-over-time studies conducted over the past three years (see Section 6).

In 1992-93, a significant proportion of the students writing English 30 (87.9%) attained diploma examination marks at or above the *acceptable standard*, and 9.6% attained diploma examination marks at or above the *standard of excellence* (see Figure 7-1). Although 12.2% did not meet the *acceptable standard*, most of these students (10.2% of all students) attained marks ranging from 40% to 49%. Some of these students might achieve the *acceptable standard* if they receive further instruction.

Figure 7-1

Distribution of English 30 Diploma Examination Marks 1992-93 School Year



Students achieving the *acceptable standard* but not the *standard of excellence*.

Students achieving the *standard of excellence*.

Acceptable Standard

Students who achieved at or slightly above the *acceptable standard* were able to understand the reading selection presented in *Part A: Written Response* and to respond appropriately by relating details from the selection to their own experiences when writing their response

to the Minor Assignment.
In responding to the Major Assignment, students achieving at or slightly above the *acceptable standard* presented a clear controlling idea that reflected a basic understanding of the chosen literary work, but not always an understanding of the author's purpose or the wider implications of the literature. That is, students located a character or characters who illustrated a quality suggested by the topic, but they usually did not explore what the author was saying through that character.

Students achieving at or slightly above the *acceptable standard* organized their writing in a mechanical or functional way, giving clear direction to the reader. Occasionally, however, these students simply recounted parts of the story. Students writing at this level usually used language in a correct, practical way to "get the job done" rather than to enhance the details that they were communicating or to illustrate ideas for the reader.

As in the past, students at this level continued to demonstrate some awareness of control of the stylistic choices and the conventions of written language. While such problems as pronoun-antecedent agreement and subject-verb agreement did appear in the writing, more pervasive and serious were errors involving confusion of syntax and word usage. However, the fact that students with final course marks in the mid-range (60% to 70%) can and do produce some well-written sentences suggests that they have the potential to move from "acceptable" to "proficient" in their production of written language.

In responding to *Part B: Reading*, students who achieved at or slightly above the *acceptable standard* demonstrated that they were generally capable of effective close reading and of understanding difficult material, especially non-fiction. These students were often unsuccessful, however, on vocabulary and other complex questions requiring closer examination, recognition of contextual clues, and re-reading of the passage.

Standard of Excellence

Students who achieved or exceeded the *standard of excellence* on *Part A: Written Response* produced writing that displayed confidence in ideas, organization, and choice of language. Writing at this level reflected a sensitivity to the emotional tone of the reading selection and also reflected an appreciation of the importance of lively, concrete detail in personal responses. Often, there was a mature understanding of the significance of the topic in the greater scope of human endeavor.

In responding to the Major Assignment, students at this level of achievement demonstrated a perceptive understanding of literature. They were able to use the topic as a springboard to a focused, engaging, thorough examination of a chosen work of literature. Students who achieved or exceeded the *standard of excellence* were confident but thoughtful in presenting their ideas and opinions. Their ability to use language effectively to enhance their expression also suggested confidence.

In responding to *Part B: Reading*, students achieving or exceeding the *standard of excellence* demonstrated that they had highly developed skills in close reading. These students also achieved noticeably higher scores on questions requiring competence in vocabulary. Students at this level were successful at reading critically and responding precisely to complex literary works such as Shakespearean drama and poetry dense with imagery.

Do the population and performance data reveal any significant trends?

Table 7-1 provides a comparison over the last four years of selected population and performance indicators. The only trend suggested by any of the indicators is the consistent increase in the number of students writing the diploma examination in English 30. The increase from 1990-91 to 1991-92 was slightly over 5%. In 1992-93, the increase was about 2%. Between 1989-90 and 1992-93, the English 30 population has increased 10.2%.

Table 7-1

English 30
Four-Year Comparison of Selected Population and Performance Indicators

	1989-90	1990-91	1991-92	1992-93
Number of Students	22 213	22 841	24 027	24 489
Male/Female Proportions in Percent	46/54	45/55	45/55	45/55
Percentage of Students Meeting *Acceptable Standard* (Diploma Exam)	89.6	90.6	89.0	87.9
Percentage of Students Meeting *Standard of Excellence* (Diploma Exam)	13.0	9.3	10.9	9.6
Equated Average Percentage on the Machine-Scored Component of the Diploma Exam	68.1	68.2	67.5	69.3

English 33

What are the characteristics of the student population that wrote the examinations?

In 1992-93, 9 939 students with corresponding school-awarded marks wrote English 33 diploma examinations. This is approximately 29% of all students who wrote English 30 or English 33 diploma examinations in 1992-93. Generally, students who write English 33 write few (if any) other diploma examinations. In 1992-93, of the 9 939 students who wrote English 33, 16.4% (1 633) wrote Biology 30, 12% (1 193) wrote Social Studies 30, and 5.4% (537) wrote English 30.

English 33 is a course "appropriate for students intending to go to vocational school or to seek employment after leaving high school" (*Senior High School Language Arts 1982 Curriculum Guide*, page 6). The fact that so few English 33 students took other diploma examination courses may indicate that these students did, indeed, plan to enter the workforce immediately upon graduation.

In 1992-93, as in previous years, English 33 was selected by more male students than female students: 5 717 male students and 4 222 female students.

What is the overall performance of students on the examinations?

The overall performance of students writing the English 33 diploma examinations this past school year was generally satisfactory. In 1992-93, 86.2% of students writing English 33 attained diploma examination marks at or above the *acceptable standard*, and 5.5% attained diploma examination marks at or above the *standard of excellence* (see Figure 7-2). The proportion of students who did not meet the *acceptable standard* was 13.8%, but 10.7% of students attained marks ranging from 40% to 49%. Only 3.1% attained marks of 39% or lower.

Increase in Standards for Matters of Convention

In 1992-93, additions were made to two of the criteria under the *Matters of Convention* scoring category for Section I: Personal Response to Literature. The additions, shown in italics, are as follows:

> Limited: This writing has frequent errors in mechanics and grammar. Many of these errors reduce the clarity of communication *and indicate that the student is not in control of conventions.*

> Satisfactory: This writing has occasional errors in mechanics and grammar. A few of these errors may reduce the clarity of communication; *nevertheless, the student generally demonstrates control of conventions.*

Similar additions were made to the *Writing Skills* scoring descriptors for Section II: Functional Writing and Section III: Response to Visual Communication.

It is important to note that these additions constitute a raising of the standards for *Matters of Convention*. Beginning in January 1993, there was an increased expectation for degree of correctness in language use for students writing the English 33 diploma examinations.

Acceptable Standard

Students who achieved at or slightly above the *acceptable standard* were able to respond clearly and correctly to all three assignments in *Part A: Written Response*. They demonstrated a clear understanding of the reading selection in their responses to Section I: Personal Response to Literature, and they addressed the assignment in a conventional manner. These students discussed life experiences and themes from literature in perfunctory but acceptable ways.

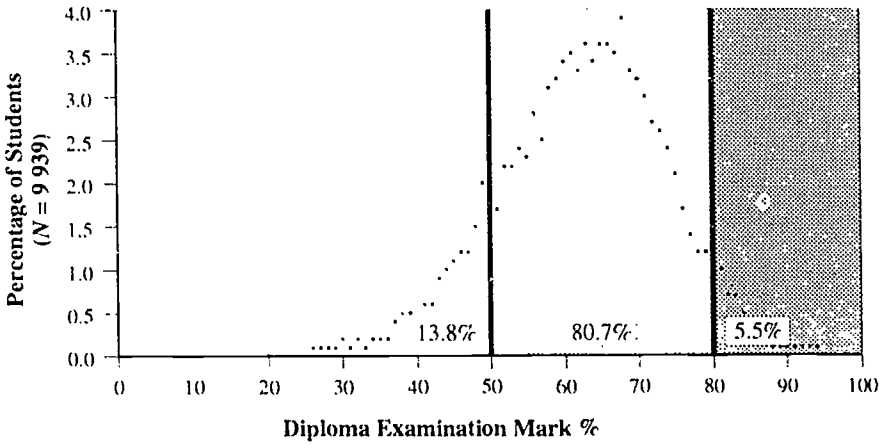
Students achieving at or slightly above the *acceptable standard* provided satisfactory responses to Section II: Functional Writing. These students used the information provided in the assignment to fulfill their purposes sufficiently and were able to adopt an appropriate tone that demonstrated an awareness of audience. They were able to organize their work logically and clearly.

When responding to Section III: Response to Visual Communication, these students tended to interpret the photograph in conventional ways using generalized observations for support. Students who just met the *acceptable standard* on *Part A: Written Response* provided few specific details in their writing. Writing skills demonstrated by these students were minimally acceptable.

In responding to *Part B: Reading*, students who achieved at or slightly above the *acceptable standard* were able to understand reading selections that were intended for a general audience. They were able to draw some inferences from context and to apply

Figure 7-2

Distribution of English 33 Diploma Examination Marks 1992-93 School Year



basic concepts such as metaphor and foreshadowing. However, these students had difficulty understanding and interpreting irony.

In responding to the revision assignments on *Part B: Reading* (students were required to make decisions about appropriate revisions to the draft of a letter), many students achieving at or slightly above the *acceptable standard* appeared to understand the rationale behind revisions in areas such as tone, diction, and conventions. What was discouraging was that many of these students did not transfer this apparent understanding to their own writing on *Part A: Written Response*.

Standard of Excellence

Students who achieved or exceeded the *standard of excellence* generally produced work of superior quality on all of the assignments in *Part A: Written Response*. When responding to Section I: Personal Response to Literature, students at this level usually interpreted the assignment in an insightful way. They presented significant themes or ideas and used precise examples from life and literature to support their themes. Many of these students responded to the universal implications of the selections and explored topics in a perceptive manner. These students used precise, thoughtfully chosen, and often imaginative details. They were able to select examples and illustrations from reading selections, from their own experience, and from other literature to fulfill their purpose. Their writing was focused, coherent, and smoothly developed. They used words and structures that were effective and basically free from errors. These students projected confidence in their writing.

When responding to Section II: Functional Writing, students achieving or exceeding the *standard of excellence* used an appropriate and engaging tone. They provided significant information that was enhanced by appropriate details. These students had a precise awareness of audience, and they provided important and essential information necessary for their purpose. Writing skills demonstrated at this level were relatively even; word choice and sentence structure were appropriate and often effective, and there were few errors in mechanics and grammar.

When responding to Section III: Response to Visual Communication, students achieving the *standard of excellence* presented insightful interpretations of the photograph. stating appropriate themes or ideas. Their ideas were typically extended and reinforced throughout their compositions. These students chose specific elements from the photograph to support their ideas. They made few mechanical or grammatical errors and produced relatively lengthy responses.

In responding to *Part B: Reading*, students achieving or exceeding the *standard of excellence* demonstrated an understanding of relatively complicated literature. They were able to delve beyond the literal level of a work to make inferences from important features such as irony and symbolism. These students demonstrated that they carefully and thoughtfully read the selections and all parts of each question before answering.

Do the population and performance data reveal any significant trends?

Table 7-2 provides a comparison over the last four school years of selected population and performance indicators.

The number of students writing English 33 diploma examinations continues to increase each year. The increase between 1989-90 and 1992-93 is 18.8%.

The proportion of male and female students writing the English 33 diploma examinations has remained relatively constant over the past four years, but this difference in proportion is unusual for diploma examination subjects (see Figure 3-1).

The two performance indicators have also been relatively constant over the past three school years. The difference in the proportion of students achieving either standard from year to year is slight. Given that writing standards were increased for English 33 in 1992-93, it is noteworthy that the proportions of students achieving standards remained relatively consistent this year when compared with proportions achieving standards in past years.

Table 7-2

English 33
Four-Year Comparison of Selected Population and Performance Indicators

	1989-90	1990-91	1991-92	1992-93
Number of Students	8 369	8 586	9 254	9 939
Male/Female Proportions in Percent	57/43	57/43	58/42	58/42
Percentage of Students Meeting *Acceptable Standard* (Diploma Exam)	85.1	88.5	87.3	86.2
Percentage of Students Meeting *Standard of Excellence* (Diploma Exam)	5.9	5.9	5.5	5.5
Equated Average Percentage on the Machine-Scored Component of the Diploma Exam	64.7	63.7	64.2	64.8

Social Studies 30

What are the characteristics of the student population that wrote the examinations?

In 1992-93, 21 098 students with corresponding school-awarded marks wrote the Social Studies 30 diploma examinations. Approximately 70% of the Grade 12 population who wrote an English 30 Diploma Examination also wrote the Social Studies 30 Diploma Examination. To qualify for an Advanced High School Diploma in Alberta, a student must receive credit in Social Studies 30 in addition to receiving credit in English 30. This suggests that many of the students who expected to graduate in 1993 planned to earn an advanced diploma.

Generally, students writing Social Studies 30 also wrote other diploma examinations. For example, the most popular other diploma examination courses (besides English 30) taken by students writing Social Studies 30 were Mathematics 30 (12 616) and Biology 30 (12 707). There are high correlations between diploma examination marks in Social Studies 30 and English 30 (0.69), and Social Studies 30 and Biology 30 (0.69). There is also a high correlation (0.76) between Social Studies school-awarded marks and Social Studies 30 diploma examination marks.

Social Studies 30 is a course "designed for those students who are seeking an Advanced High School Diploma and who will likely pursue post secondary studies" (*Senior High Social Studies Program of Studies*, page 1). The fact that many Social Studies 30 students took other diploma examination courses may indicate that these students generally plan to enter post-secondary institutions upon graduation.

Social Studies 30 was selected by more female than male students. In 1992-93, 11 147 female students and 9 951 male students wrote the Social Studies 30 diploma examinations.

What is the overall performance of students on the examinations?

The overall performance of students writing the Social Studies 30 diploma examinations was generally satisfactory. The equated average percentage on the machine-scored component of the exam was significantly better than the results obtained in 1989, 1990, and 1992. In 1993, 79.9% of the students writing Social Studies 30 attained diploma examination marks at or above the *acceptable standard*, and 12.5% of the students attained diploma examination marks at or above the *standard of excellence* (see Figure 7-3). The proportion of students who did not meet the *acceptable standard* was 20.1%, but 14.7% of students attained marks ranging from 40% to 49%. The percentage of students whose marks were 39% or lower was 5.4%.

Acceptable Standard

In answering the multiple-choice questions in Part A of the examination, students who achieved at or slightly above the *acceptable standard* were able to recall and comprehend certain historical events or economic and political concepts. Students just meeting the *acceptable standard* experienced difficulty, however, with questions involving chronology, various critical thinking skills, and the application of knowledge to new or unfamiliar situations. In particular, these students experienced difficulty with textual or data-based questions (such as those involving a cartoon, graph, map, or series of quotations) that required them to see relationships, interpret trends, understand cause and effect, or identify stated or unstated assumptions.

Many students who just met the *acceptable standard* had difficulty dealing with the complexity of the task on *Part B: Written Response*. Typically, these students present largely descriptive essays containing both relevant and irrelevant detail. Many students who just met or who fell short of the *acceptable standard* had difficulty applying and integrating concepts and defining the issues. They appear to have rushed headlong into their writing without planning their essays and without considering the relevance of historical or contemporary examples associated with the issues under discussion.

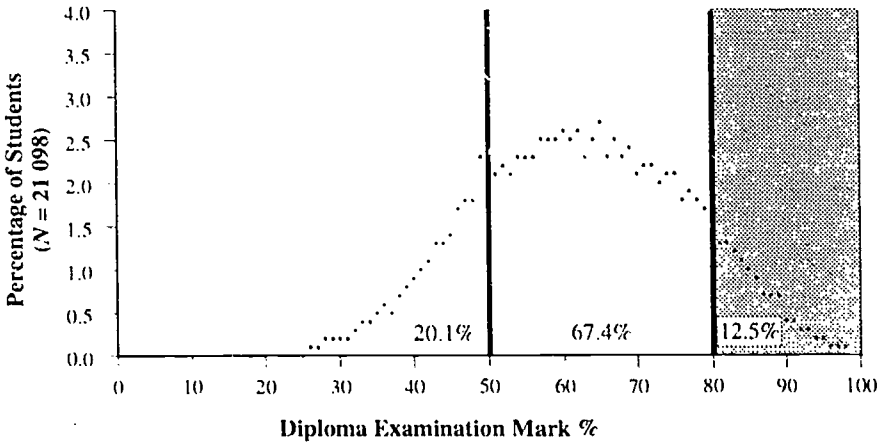
Students who fell short of the *acceptable standard* often presented memorized information at random rather than a thought-out discussion. They left the task of sorting out scattered facts to the reader. They presented popularly accepted versions of past or present events as unsupported, simple assertions. They often made little attempt to elaborate, explain, or develop ideas. Such writing received low scores.

Standard of Excellence

In answering the multiple-choice questions in Part A, students achieving or exceeding the *standard of excellence* demonstrated that they understood social studies concepts and comprehended historical,

Figure 7-3

Distribution of Social Studies 30 Diploma Examination Marks 1992-93 School Year



political, and economic relationships, many of which are very complex. They were consistently able to interpret and evaluate information and ideas, and to review, analyze, and synthesize specific information.

Students who achieved or exceeded the *standard of excellence* often produced powerful and substantive writing in their responses to the assignment in *Part B: Written Response*. Given the complexity of the task and the constraints of time, some of these students' compositions were truly remarkable. Many of the responses of students achieving at this level revealed qualities of argument, support, development, and organization that exhibited a breadth of historical and contemporary knowledge. Students achieving or exceeding the *standard of excellence* clearly showed ownership of the ideas they expressed; their writing revealed engaged minds thoughtfully immersed in issues relevant and meaningful to them. These students were comfortable in exploring ideas in their complexity.

Do the population and performance data reveal any significant trends?

Table 7-3 provides a comparison over the last four school years of selected population and performance indicators.

The number of students writing Social Studies 30 diploma examinations continues to increase. Since 1989-90 the increase has been 12.9%. The increase from 1990-91 to 1991-92 was 3.2%, and 1.4% from 1991-92 to 1992-93. The proportion of male and female students writing and the two performance indicators have remained relatively constant.

Although more females than males wrote the diploma examination in Social Studies, males continued to achieve higher averages than females: 64.8% compared to 61.0% in 1991-92, and 66.3% compared to 64.2% in 1992-93. On the multiple-choice component, in particular, males consistently achieve higher scores than females (67.7% compared to 62.1% in 1992-93). This difference is not evident in the written response, where the averages in 1992-93 were 55.9% for males and 56.5% for females.

Student performance on the Social Studies 30 Diploma Examination is showing some improvement over performance in previous years. For 1993, students performed better on the machine-scored component of the examination than in previous years. The proportions of students achieving the standards remain relatively constant. Revisions to the examination blueprint, beginning in 1990, have emphasized the demonstration of cognitively demanding critical thinking skills in both the multiple-choice and written components of the examination. Given that standards have increased, it is encouraging that the proportions of students achieving standards (whose numbers have also increased) have remained relatively consistent over the years.

Table 7-3

Social Studies 30
Four-Year Comparison of Selected Population and Performance Indicators

	1989-90	1990-91	1991-92	1992-93
Number of Students	18 690	20 168	20 804	21 098
Male/Female Proportions in Percent	48/52	47/53	47/53	47/53
Percentage of Students Meeting *Acceptable Standard* (Diploma Exam)	79.9	84.2	81.1	79.9
Percentage of Students Meeting *Standard of Excellence* (Diploma Exam)	14.5	15.9	13.5	12.5
Equated Average Percentage on the Machine-Scored Component of the Diploma Exam	64.4	66.4	65.4	68.2*

*Indicates the difference is significant from 1992 ($p = 0.01$)

Français 30

What are the characteristics of the student population that wrote the examinations?

Français 30 is the final course of the Français 10-20-30 program designed for francophone students as defined in Section 23 of the *Canadian Charter of Rights and Freedoms*. Students enrolled in Français 30 are required to write the Français 30 Diploma Examination.

There were 98 regular school students who wrote the Français 30 Diploma Examination in the 1992-93 school year, 55 of whom completed the course in the first semester and wrote the January 1993 examination. The other 43 were in a full-year program and wrote the examination in June 1993. One first semester student wrote again in June, for a total of 99 written examinations. Because very few students wrote at each examination administration, results must be interpreted with caution.

What is the overall performance of students on the examinations?

The overall performance of the 98 students who wrote the Français 30 Diploma Examination in the 1992-93 school year was satisfactory. All but one attained final course marks at or above the *acceptable standard*, and ten of them attained or exceeded the *standard of excellence*.

Students enrolled in Français 30 wrote an average of five diploma examinations, indicating that most of these students are hoping to receive advanced high school diplomas.

More students attained the *standard of excellence* in 1992-93 compared to 1991-92. However, such differences are not generalizable because of the small population.

La Partie A: Production écrite

The written-response section of the Français 30 Diploma Examination required students to write two assignments related to a selection from a work of literature presented on the examination. The first assignment, "Premier Sujet," elicited a personal response to the selection. The second, "Deuxième Sujet," asked students to choose literature read in class and to relate it to a given theme inspired by the selection.

Students were able to understand the tone and content of the given literature and to respond clearly and effectively. For the personal response, they expressed their personal opinions and reactions with confidence. Most took the more obvious approach to the question by supporting the given theme, and a few were able to present an opposing view successfully. Examples taken from their own experiences or from general observations were generally appropriate and often interesting. Although the writing of students just meeting the *acceptable standard* was sometimes wordy and repetitious, markers clearly understood what they had to say. Students achieving or exceeding the *standard of excellence* were able to present their ideas succinctly, directly, and emphatically.

In the second assignment, which was related to literature read in school, students had no difficulty selecting works that reflected the given theme. Students achieving or exceeding the *standard of excellence* chose significant details from the literature to show how the given theme was developed by the author. Students just meeting the *acceptable standard* tended to choose more minor details or to repeat one significant detail, with less effect. All students, however, were able to convince the readers of the relationship between what they had read and what the assignment required. Students have learned well how to organize their ideas, how to choose effective vocabulary and structures, and generally how to follow conventions of language.

It must be remembered that students are writing in a limited time under stress and that their work is considered a first draft. Under these conditions, what they achieved was impressive and often a pleasure to read.

La Partie B: Compréhension écrite

Part B: Reading Comprehension consisted of two booklets. The readings booklet contained selections from non-fiction and fiction, one poem, and one piece of drama. The questions booklet contained 70 multiple-choice questions based on these readings. The questions were classified according to thinking skills.

Students' performance was generally satisfactory. They were able to identify and select, infer, interpret, and evaluate main ideas. They were also able to recognize the rapport between the author and the reader as well as discern values expressed. Students achieving the *standard of excellence* seemed better able to discern the nuances required to choose the right answer in some questions. Students achieving the *acceptable standard* did well on the questions requiring a literal understanding. These students should be encouraged to refer to the reading selections when contemplating their answers. This could help them to perceive more of the nuances of the text.

Do the population and performance data reveal any significant trends?

We can make no comments on trends in the data because the number of students enrolled in the course is extremely small.

What are the characteristics of the student population that wrote the examinations?

In 1992-93 school year, 19 982 students with corresponding school-awarded marks wrote the Mathematics 30 Diploma Examination. This represents approximately 58% of the students who wrote either the English 30 or English 33 diploma examinations.

What is the overall performance of students on the examinations?

Overall performance of students who wrote the Mathematics 30 diploma examinations during the 1992-93 school year improved over the 1991-92 administrations. In 1992-93, 75.1% of the students writing Mathematics 30 attained diploma examination marks at or above the *acceptable standard*, this is higher than in the 1991-92 school year, when 73.2% achieved this standard. Only 17.8% of the students achieved the *standard of excellence*. This is higher than in the 1991-92 school year, when 15.6% attained diploma examination marks at or above the *standard of excellence* (see Figure 7-4). During the 1992-93 administrations, 24.8% of the students did not meet the acceptable standard, compared to 26.8% in 1991-92.

Standards for the Mathematics 30 diploma examinations for the 1992-93 school year were published in the *Mathematics 30 Diploma Examination Information Bulletin*. The emphases on problem solving and communication skills in the Mathematics 30 curriculum were incorporated into the examination. On the examination, students were expected to describe mathematical situations, explain their solutions, write directions, explain their reasoning, create new problems, create new strategies, generalize a mathematical situation, and formulate hypotheses. The Mathematics 30 examiners' reports outline the scoring criteria for these questions.

Acceptable Standard

Students who met the *acceptable standard* of performance but not the *standard of excellence* (57.3%) were able to solve problems involving more than one step as long as the information provided was given in a "standard" form and could be referenced on the formula sheet. In trigonometry, for instance, students were able to solve a trigonometric identity when the information needed to solve the identity was given on the formula sheet. For the most part, students in this group were able to recognize relationships between mathematical concepts and were able to recognize these relationships as long as they were presented in a specific sense. Many were not able to identify these relationships in the general case. For example, these students were able to find the zeros of a polynomial, given its graph, and then were able to identify that there is a relationship between the multiplicities of the zeros of the polynomial and the degree of the polynomial, but could not generalize the effect on the graph of the polynomial if the multiplicities of the zeros changed.

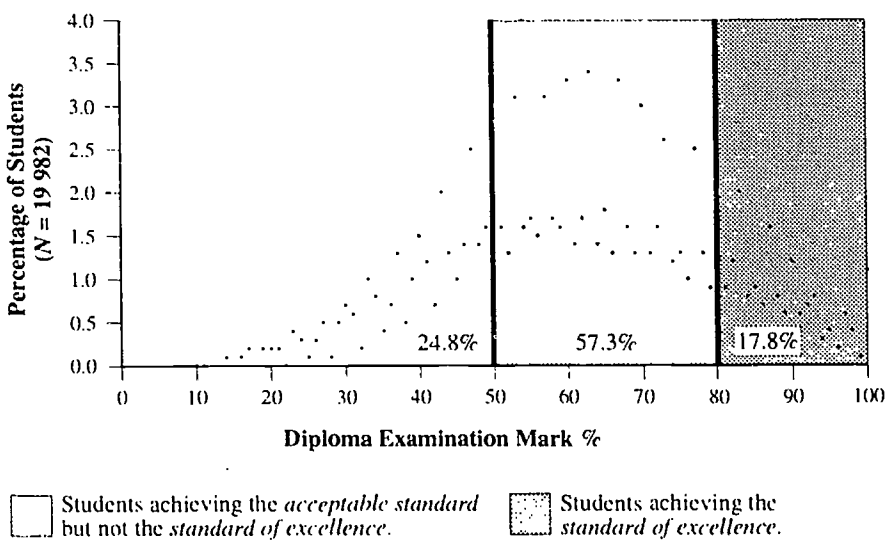
Students who did not meet the *acceptable standard* of performance on the Mathematics 30 Diploma Examination (24.8%) had difficulty solving problems other than those that required solving for a single piece of information using a formula provided on the formula sheet. These students were able to solve problems that required a one-step translation, such as finding the value for sec θ, given cos θ. As a second example, these students were able to find the zeros of a polynomial, given its graph, but were not able to recognize that there is a relationship between the multiplicities of the zeros of the polynomial and the degree of the polynomial.

Standard of Excellence

Students who met the *standard of excellence* or higher in Mathematics 30 (17.8%) had little difficulty solving any problems, regardless of the manner in which the material was presented and the number of steps required to solve the problem. For instance, those students who achieved the *standard of excellence* were able to read information from equations that were presented in both a "standard" and "non-standard" form. Further, they recognized and were able to describe relationships between mathematical concepts in both the specific and the general cases. For example, these students were able to find the zeros of a polynomial, given its graph, and then were able to identify that there is a relationship between the multiplicities of the zeros of the polynomial and the degree of the polynomial. They could then discuss this polynomial in the general case; for instance, how the

Figure 7-4

Distribution of Mathematics 30 Diploma Examination Marks 1992-93 School Year



graph of the polynomial would change if the multiplicity of the zero changed. Students who attained the *standard of excellence* were able to relate one concept to another and were able to apply concepts in unfamiliar situations.

Do the population and performance data reveal any significant trends?

For the fifth year in a row, approximately 30% of the students who wrote the examination in June did not meet the acceptable standard.

Many students who are enrolled in Mathematics 30 continue to have difficulty relating an algebraic expression to a graphical representation. For instance, students may be able to solve a trigonometric equation but cannot relate the meaning of the solution to the graph of the trigonometric function.

Communication skills in mathematics are improving. Students are willing to attempt to explain mathematical procedures or concepts. However, during this last year, students were expected to construct an argument justifying their conclusion. Students had difficulty doing this—they were able to state their conclusion but were not able to complete a justification.

Biology 30

What are the characteristics of the student population that wrote the examinations?

In 1992-93, 21 604 students wrote the Biology 30 Diploma Examinations and also received a school-awarded mark. This represents an increase of 6.4% compared to 1991-92. The gender distribution was 57.9% female and 42.1% male, which is similar to the 1991-92 distribution.

The populations of Biology 30 students who also completed other diploma courses (see Table 7-4) suggest that, in any given examination year, fewer than half of the Biology 30 students of that year qualified to receive the Advanced High School Diploma.

As in the previous year, the group attaining the highest examination average (see Table 7-5) wrote Biology 30 diploma examinations while Grade 11. This group contains a high proportion of students who plan to take additional 30-level science courses in Grade 12.

What is the overall performance of students on the examinations?

The overall performance of students who wrote the Biology 30 diploma examinations was satisfactory. This is reflected in the examination average (65.1%) and in the proportion of students (81.5%) who achieved the *acceptable standard*. A significant proportion of students (22.1%) achieved the *standard of excellence*. Although 18.4% of the students did not meet the *acceptable standard*, 6.8% of all students obtained marks ranging from 45% to 49%. Most of these students would be able to achieve the *acceptable standard* on future diploma examinations in Biology 30 if they receive additional instruction.

A high correlation (0.821) exists between Biology 30 school-awarded marks and Biology 30 diploma examination marks. High correlations also exist between diploma examination marks in Biology 30 and Social Studies 30 (0.695) as well as Chemistry 30 (0.699). A low correlation exists between diploma

Table 7-4

Biology 30
Three-Year Comparison of Percent of Biology Population Who Also Took Selected Subject

Subject	1990-91 Population	Percent	1991-92 Population	Percent	1992-93 Population	Percent
Biology 30	19 167	100.0	20 313	100.0	21 604	100.0
English 30*	12 558	65.5	13 097	64.5	13 672	63.3
English 3o	1 320	6.9	1 492	7.3	1 633	7.6
Social St. 30*	11 801	61.6	12 181	60.0	12 709	58.8
Math 30*	9 090	47.4	9 461	46.6	10 089	46.7
Chemistry 30	7 911	41.3	8 231	40.5	8 844	40.9
Physics 30	3 359	17.5	3 342	16.5	3 654	16.9

* Required for the Advanced High School Diploma

examination marks in Biology 30 and English 33 (0.358).

The percentage of female students who achieved the *acceptable standard* on the Biology 30 diploma examinations was 80.0 compared with 83.8 of male students. The percentage of females who achieved the *standard of excellence* on the Biology 30 diploma examinations was 21.2 compared with 23.4 of males. The Biology 30 diploma examinations average for females was 64.4% compared with 66.0% for males.

The distribution of Biology 30 Diploma Examination marks is given in Figure 7-5.

Acceptable Standard

Students who attained the *acceptable standard* but not the standard of excellence (57.8% of the population) understood the basic functions of human body structures. They recalled the properties of key biological substances and therefore selected correct physiological functions for these substances. This group of students interpreted correctly data presented in simple graphs, tables, and diagrams. However, they found it difficult to interpret complex graphs and tables that presented interrelated sets of data. These students related biology concepts to simple human experiences but found it difficult to analyze multi-step human physiology problems. Questions that required the understanding of biology concepts within the context of technology (artificial heart valves, kidney machines) proved difficult. The basic language of biology was understood by these students, but interdisciplinary science vocabulary and concepts (ion, compound, reaction, transmission, curvature) created problems for them. The students in this group composed one or two sentence answers that were clear and logical for questions that contained only one component. However, they had difficulty creating multi-paragraph responses to problems that required developing several ideas. Their answers to these questions frequently consisted of recalled information that did not address the central issues of the problems posed.

Students who did not attain the *acceptable standard* (18.4% of the population) did not understand basic functions of human body structures. They found it difficult to interpret data represented in diagrams and tables. They did not know the functional properties of key biological substances. They were unable to organize sequentially the major steps of physiological processes. This group of students could not compose clear and logical explanations for single-component problems. Their responses indicated that they did not adequately understand the meaning of the questions they attempted to answer.

Standard of Excellence

Students who attained the *standard of excellence* or higher (22.1% of the population) demonstrated consistent performance throughout the examination, whether they selected or created responses. They could recall precise knowledge about human organ structure and function. They could then use this knowledge to solve multi-step problems. They were able to trace the pathways that materials follow through the human body and arrange physiological processes in sequential order. They could form hypotheses based on initial data and then evaluate them in the light of new data. They could evaluate experimental designs and suggest corrective procedures if errors were evident. Their compositions demonstrated a clear understanding of cause-and-effect relationships. They used scientific vocabulary with precision and communicated clearly.

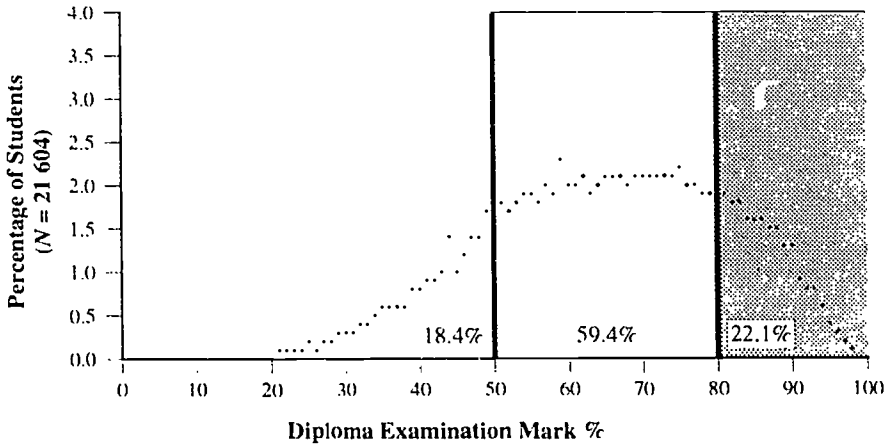
Table 7-5

Biology 30
Performance of Selected Subpopulations 1991-93

Year	Subgroup	Grade 11 Students	Grade 12 Students	Repeaters	Transferred In From Outside of Province
1992-93	Percent of Population	10.2	79.5	6.3	6.3
	Examination Average	69.4	64.6	59.4	64.3
1991-92	Percent of Population	11.2	78.8	5.7	4.3
	Examination Average	67.5	62.6	56.6	63.3
1990-91	Percent of Population	9.1	81.1	5.2	4.6
	Examination Average	69.5	63.5	58.9	65.2

Figure 7-5

Distribution of Biology 30 Diploma Examination Marks
1992-93 School Year



Do the population and performance data reveal any significant trends?

The total number of students who obtained a final blended mark in Biology 30 increased by approximately 12.7% from 1990-91 to 1992-93. The proportion of Biology 30 students who also took English 33 increased slightly (6.9% to 7.3%). During this same

period, the proportion of Biology 30 students who took English 30, Social Studies 30, and Mathematics 30 decreased slightly (see Table 7-4).

From 1990-91 through 1992-93, the created-response section of the Biology 30 examinations changed in that increasing emphasis was placed on solving problems that were set in authentic science research contexts. Students were expected to solve these problems by using scientific process skills and by relating their understanding of science concepts to technological and societal issues. In keeping with these changes, the individual items were reduced in number but increased in scope. The exams as a whole still remained accessible to the group of students who achieve at the acceptable level but became more discriminatory for those students who achieve at the level of excellence. Consequently, over the past three years there has been a small decrease (12.5% to 9.5%) in the percentage of students who obtained the level of excellence on the created-response section of the examinations.

The percentage of students who achieved the *acceptable standard* but not the *standard of excellence* on the Biology 30 diploma examinations increased by 4% from 1990-91 to 1992-93. The proportion of students who achieved the *standard of excellence* on the Biology 30 diploma examinations for this same period fluctuated slightly. The proportion of females who achieved the *acceptable standard* in Biology 30 from 1990-91 to 1992-93 increased by approximately 3.4%, whereas the proportion of males who achieved the *acceptable standard* for this same period increased by 5.1%.

Chemistry 30

What are the characteristics of the student population that wrote the examinations?

In the 1992-93 school year, 16 865 students with corresponding school-awarded marks wrote the Chemistry 30 diploma examinations. This represents approximately one-half of the students who wrote either the English 30 or English 33 diploma examinations. Even though this number appears to meet the expected size of the target group, not all students capable of achieving the acceptable standard or the standard of excellence were enrolled in chemistry. For example, some students who were successful in Physics 30 did not take Chemistry 30. Since these students are likely to be successful in the chemistry program, they could be encouraged to enrol.

What is the overall performance of students on the examinations?

The overall performance of students who wrote the Chemistry 30 diploma examinations during the 1992-93 school year was satisfactory (see Figure 7-6). In 1992-93, 81.7% of the students writing Chemistry 30 attained diploma examination marks at or above the acceptable standard, and a significant proportion of the students, 21.1%, attained diploma examination marks at or above the standard of excellence. This 21.1% is slightly lower than the 22.5% of the students who attained the standard of excellence last year. Many of the students, 8.5%, attained marks ranging from 44% to 49%. These students could achieve a pass with further instruction.

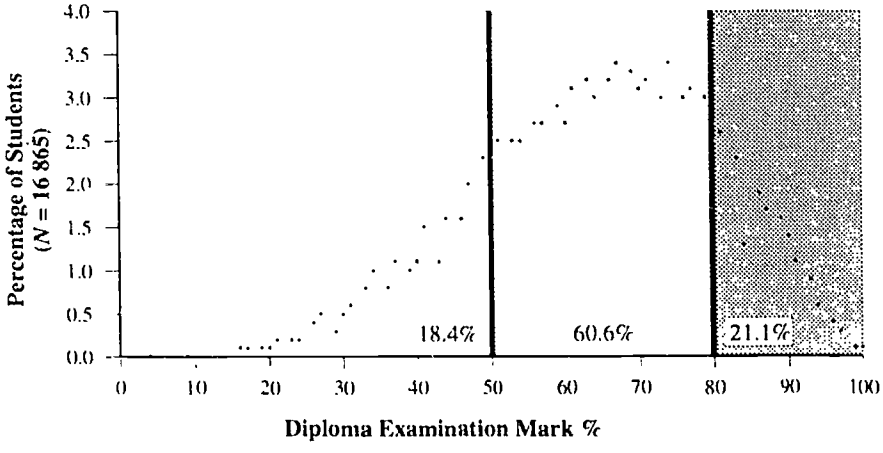
The distribution of Chemistry 30 Diploma Examination marks is given in Figure 7-6.

Acceptable Standard

Students who met or exceeded the *acceptable standard* but were below the *standard of excellence* (60.6% of the population) were able to do stoichiometry of more than one step as long as it did not involve writing and balancing equations for chemical reactions. These students could transpose data to and from a graphical form. They successfully ranked species on the basis of their properties and were able to use and extract pertinent information from the data booklet. However, they had difficulty recognizing ratios other than 1:1 in acid-base chemistry and solving stoichiometric problems. They normally recognized the correctness of

Figure 7-6

Distribution of Chemistry 30 Diploma Examination Marks 1992-93 School Year



a situation for most concepts but had difficulty designing their own experimental procedures based on these concepts. These students were usually able to organize their creative responses in an understandable fashion, though they had difficulty with communication conventions, such as significant digits and, especially, SI prefixes.

These individuals worked best at the macroscopic level and as a result did well on the multiple-choice questions. They averaged approximately 50% on the created-response sections of the examination.

Students who did not meet the *acceptable standard* of performance on the Chemistry 30 Diploma Examination (18.4%) had difficulty solving stoichiometric problems other than those involving a single-step addition/subtraction problem, such as calculating the voltage of a cell given the half-reactions. These students were unable to transfer data to or from graphical form or to use data to predict trends, patterns, or properties. They also had difficulty in predicting chemical changes and writing appropriate chemical equations for the changes involved. In general, these students had difficulty in creating their responses and communicating their ideas clearly. As a result, they did not do well on the created-response (numerical and written) section of the examinations. They did, however, recognize correct statements about essential concepts and had their greatest success on the selected (multiple-choice) section of the examinations.

Standard of Excellence

Students who met the *standard of excellence* or higher (21.1%) were able to solve any stoichiometric problem and to recognize ratios other than 1:1 in acid-base chemistry. They also recognized relationships between the dissolved solute and the resulting species, and as a result were able to accurately predict physical and chemical properties of solutions. They had no difficulty distinguishing between strength and concentration, nor did they have difficulty inferring properties from graphical data. They were able to recognize when a reaction would or would not occur and thus did not always assume that reaction was forthcoming when two or more reagents are combined. In general, they were able to apply their knowledge in new and novel situations, and as a result were very successful in creating responses. They did well on all sections of the examinations, and their work on the created-response sections was as expected.

Do the population and performance data reveal any significant trends?

The previously identified trend continues, that is, a significant Grade 11 participation and achievement in Chemistry 30. The number of students in their second year of high school electing to enrol in Chemistry 30 dropped slightly from 8.5% to 8.0%. (See Table 7-6). This drop may have been due to the field validation of the new Chemistry 20 program. This trend of decreasing Grade 11 participation is expected to continue in 1993-94 with the province-wide implementation of the new Chemistry 20 program.

The achievement of fourth year students and students transferring from out-of-province decreased slightly in comparison to last year.

The overall achievement of students writing the Chemistry 30 diploma examinations has been fairly consistent. There has been no improvement over last year in any specific content area; however, a slight improvement has been noted in the quality and organization of the responses from students attaining the standard of excellence in the written-response section of the examination. Unfortunately, no similar improvement has been observed in the responses from students at or below the acceptable standard.

Table 7-6

Chemistry 30
Performance of Selected Subpopulations 1990-93

Year	Subgroup	Grade 11 Students	Grade 12 Students	Repeaters	Transferred In From Outside of Province
1992-93	Percent of Population Examination Average	8.0 67.8	82.7 64.3	4.4 57.7	4.9 66.1
1991-92	Percent of Population Examination Average	8.5 68.7	82.5 64.5	4.0 58.1	5.0 68.2
1990-91	Percent of Population Examination Average	7.0 69.9	83.6 64.2	4.2 58.5	5.2 67.9
1989-90	Percent of Population Examination Average	1.2 63.9	90.3 62.7	4.4 56.7	4.1 66.5

Physics 30

What are the characteristics of the student population that wrote the examinations?

In 1992-93, 8 458 students with corresponding school-awarded marks wrote the Physics 30 diploma examinations. In 1992-93, Physics 30 was taken by 24.6% of the students who wrote either the English 30 or English 33 diploma examinations. This relatively low participation rate is slightly lower than in previous years. For males, the participation rate in Physics 30 was 64.0% (5 410 students) and for females 36.0% (3 048 students). There are more males and females participating in Physics 30 than in the previous year. The females registered in Physics 30 again did slightly better than males, both on the school-awarded mark and the diploma examination mark. Registration in Physics 30 should continue to be encouraged, as a growing number of career opportunities have Physics 30 as a prerequisite for professional studies.

What is the overall performance of students on the examinations?

The overall performance of students writing the Physics 30 diploma examinations during the 1992-93 school year was satisfactory (see Figure 7-7). Performance was consistent with the performance in previous years. The proportion of students with diploma examination marks at or above the *standard of excellence* was 26.6%. This represents an increase of 4% from the results in the previous year. The proportion of students that failed to reach the *acceptable standard* was 18.5%, compared to the previous year's proportion of 18.6%. Thus, the examinations allowed a reasonable number of students to achieve the *standard of excellence* but still remained challenging for students achieving at or near the *acceptable standard*.

Performance from Semester to Semester

Students who wrote the 1993 January Diploma Examination did as well overall as those who wrote the June examination. Achievement comparisons are shown in Table 7-7.

Acceptable Standard

Students who met the *acceptable standard* but not the *standard of excellence* (54.9%) could reliably state and solve only those problems that could be related quickly to an equation in the data booklet. For this group, laboratory skills were limited to following explicit directions and to using laboratory data to verify known physics information. These students were capable of defining and calculating quantities such as slope, refractive index, orbit radius, and electric force. They tended to use item-specific methods in their problem solving and rarely used the major generalizations of physics such as Newton's laws or the conservation laws of charge, momentum, and energy. In addition, students had difficulty solving problems that required a transfer of their knowledge and skills in physics to real-life applications. Thus, students performing near the *acceptable standard* showed only limited understanding of the full scope and sequence of the Physics 30 *Program of Studies*. Within this restricted range of content, such students performed competently.

In 1992-93, students with final course marks near the *acceptable standard* used the data booklet supplied more as a crutch than as a summary of the physics content. Those who reached this standard showed that they could use the equations and information provided to solve problems requiring single-step calculations. They were also competent in recalling facts and essential definitions related to specific concepts. Many students found it

Figure 7-7

Distribution of Physics 30 Diploma Examination Marks
1992-93 School Year

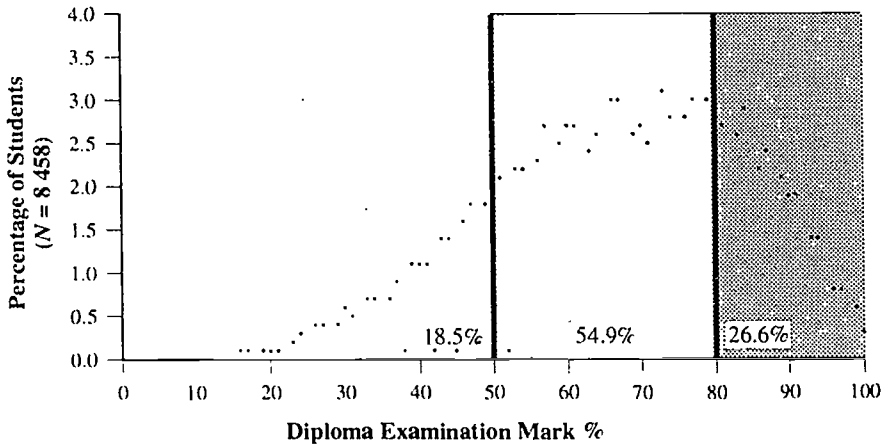


Table 7-7

Physics 30
Comparison of Diploma Examination Results
January and June 1993

	January 1993	June 1993
Students Achieving Acceptable Standard	81.6%	79.3%
Students Achieving Standard of Excellence	28.1%	24.1%
Diploma Examination Average	66.8%	64.9%

difficult to translate definitions into alternative forms and to judge whether a data booklet equation was valid within the range of values given in a particular problem. These students had difficulty identifying the relationship between two variables that had been expressed in a graphical representation. Students achieving at this standard found it difficult to make predictions based on information or data presented. They found the multiple-choice section far easier than the written-response section.

Those who did not meet the *acceptable standard* (18.5%) were also overly dependent on the data booklet but failed to use it effectively even in the solution of single-step, calculation-type problems. These students found the written-response section very difficult and typically scored 30% or lower on this section.

Standard of Excellence

Students meeting the *standard of excellence* or higher (26.6%) showed far more flexibility and creativity than those achieving the *acceptable standard*. They sought to use general methods of solution and were not afraid to use conservation laws to solve unusual problems. They illustrated a transference of knowledge from one area of physics to another and expressed their answers clearly and concisely. They made inferences that were not part of their "known" area of physics. These students were able to use generalizations of physics and distinguish between vectors and scalars or forces and fields.

In 1992-93, students with final course marks near the *standard of excellence* tended to use the data booklet to support their problem-solving strategies and were not overly dependent upon it. These students stated and easily recognized relationships between variables.

Those who achieved just below this standard had some difficulty with questions that require multi-step solutions and needed explicit cues before they were able to use a wider range of problem-solving strategies. In many cases, such students solved more complex problems in the multiple-choice format but experienced difficulty with similar concepts tested in a written-response format. Those who reached the *standard of excellence* were able to use generalizations to solve problems and did well on questions that required the use of ratios in the solutions. They were adept at selecting the correct response in the multiple-choice section and in creating their own responses for similar questions in the numerical-response and written-response sections. When confronted with a problem requiring the use of two or more steps, they created their own procedures for solving problems. Many of their responses to the written-response questions showed a high level of sophistication.

Do the population and performance data reveal any significant trends?

The overall achievement of students writing the Physics 30 diploma examinations has been fairly consistent. Students continue to do well on the multiple-choice and numerical-response sections of the examinations. In the written-response section, there continues to be a decrease in the number of students who leave questions blank.

Achievement has shown improvement in some specific areas. Students have shown a marked increase in their ability to solve problems involving routine calculations. They perform well on problems requiring single-step or two-step calculations but continue to have major difficulties using ratios. A second area that shows improvement is the recognition and identification of electric fields associated with point charges, as well as the understanding of Coulomb's inverse square law governing the magnitude of these electric fields. Students are still somewhat confused between electric forces and electric fields. A notable improvement was observed in problems requiring the use of graphical analysis. Students are able to present data graphically quite well and find the slope of such graphs. They are able to carry out complex analyses requiring the use of the slope and intercepts.

Appendix A
Diploma Examination Development Process

The staff of the Student Evaluation Branch give great care and attention to the development and marking of all diploma examinations to ensure that students' marks on diploma examinations are fair and equitable measures of their achievement.

Professional staff of the Student Evaluation Branch work with many individuals in the complex process of developing diploma examinations. Classroom teachers, school and jurisdiction administrators, representatives from post-secondary institutions, and staff of the Curriculum Branch, Language Services Branch, and regional offices of Alberta Education are all involved.

It takes approximately 18 months to complete the development of a diploma examination. The examination development process follows these steps:

- Planning
- Approving Examination Blueprints
- Developing Examination Questions
- Constructing and Administering Field Tests
- Analyzing and Revising Questions
- Constructing the Examinations
- Approving the Examinations
- Printing and Administering the Examinations
- Marking the Examinations
- Analyzing and Reporting the Results

The procedures outlined below were in effect for the 1992-93 school year.

Planning

The first step in the planning phase is to prepare (under direction from the Curriculum Branch) specifications based on the goals and objectives of the curriculum for each subject.

Examination developers in each diploma examination course then prepare an interim examination blueprint. An examination blueprint is an overall plan used to guide the development of an examination. If a diploma examination is undergoing extensive revision because of curricular change, or if a new examination is to be developed, an advisory committee of teachers and subject consultants will contribute to decisions about the emphasis and design of the examination.

As blueprints are drafted and examinations designed, examination developers and advisory committees must address these questions:

- What knowledge and skills can students be expected to possess?
- How can the various parts of the curriculum best be tested?
- What should be the weighting for each part of the curriculum tested?
- How long and how demanding should the examination be?
- What format will produce the most valid results?
- What types of questions will be most valid and reliable? (Multiple choice, short answer, extended written response?)
- How should the examination be organized to produce valid and reliable results?
- How will students' responses be scored? What will the criteria be for scoring?
- How should the results be reported?
- Who will receive the results?

To ensure that each examination is a fair and equitable measure of students' accomplishments in the course, and to ensure that results will be meaningful and reliable, examination developers incorporate curricular as well as statistical standards into the examination design.

Examination questions are developed to reflect the range of expectations for students' achievement that is embedded in the curriculum. Each question is classified and cross-referenced to the curriculum in terms of the specified knowledge, skills, and understanding the question is assessing. The range of difficulty embedded in the curriculum dictates the range of difficulty of examination questions.

Field testing confirms and validates the curricular expectations as reflected by the questions. Item analysis of the machine-scorable field tested questions provides technical data about the relative difficulty of questions and about the technical strength of sets of questions. Field tested questions are kept for use on a diploma examination or are re-field tested to ensure that they meet appropriate technical and curricular standards, or such questions are discarded.

Approving Examination Blueprints

When examination developers and their advisory committees have developed an examination design and blueprint, including criteria for scoring written responses, a committee of Alberta Education staff (Regional Offices of Alberta Education, the Curriculum Branch, Language Services Branch, and the Student Evaluation Branch)

review the proposed design. The blueprint and design the committee recommends is then reviewed by an Examination Review Committee consisting of representatives nominated by the Alberta Teachers' Association, the Conference of Alberta School Superintendents, the Universities Co-ordinating Council, the Public Colleges of Alberta, and Alberta Education. This committee makes recommendations regarding the final examination design to the Director of the Student Evaluation Branch.

Developing Examination Questions

Following approval of the examination design, format, and blueprints, examination developers plan for question development. On the recommendations of superintendents, classroom teachers from across the province are selected to work on question development committees chaired by examination developers from the Student Evaluation Branch.

Professional examination development staff of the Student Evaluation Branch ensure that teachers serving on question development committees understand the technical principles of question construction. The teacher committees develop questions that meet the curricular and technical standards incorporated in the examination design and blueprints, and that will fairly test the skills and concepts that students can be expected to have acquired.

Questions developed in committee are then carefully screened, edited, and revised so that all blueprint requirements and technical standards are met. At this point, copyright approval is sought for testing materials such as literary selections, cartoons, graphs, maps, charts, and data sets.

Constructing and Administering Field Tests

Examination developers at the Student Evaluation Branch construct field tests containing questions developed by teacher committees. Each field test is carefully edited and revised to ensure technical and curricular validity and faithfulness to the examination blueprint. School jurisdiction personnel grant permission for the administration of field tests to students in their systems in January and/or June of each school year.

Based on the geographic and demographic variables expected for the total population that will write a given diploma examination, the Student Evaluation Branch field testing administration staff selects a minimum sample of 250 students to write each field test. Field tests are administered only to students who are nearing completion of the diploma examination subject being tested so that their performances on the field test will be predictive of the performances of students writing the diploma examination.

Student Evaluation Branch professional staff members administer the field tests under secured examination conditions. This procedure allows examination developers to receive first-hand information from teachers and students about examination questions and formats. As well, the procedure ensures test security and uniform administration conditions so that statistical results can be considered reliable.

Teachers whose classes participate in field testing comment on:

- level of difficulty of questions
- curricular validity
- appropriateness of questions, data sets, reading selections, format
- problems with questions, stimulus material, art work
- clarity of instructions
- correspondence between questions and the way in which a concept is taught.

Students are also encouraged to discuss the field test with the field test administrator.

All of the data from field testing—statistical and anecdotal—provide the examination developer with accurate and first-hand information that is used to ensure that the final form of each diploma examination is a valid and reliable measure of students' achievement.

Analyzing and Revising Questions

Examination developers carefully analyze the statistical results and teacher comments for each field test to determine the need for additional field testing. Individual questions or question sets requiring changes are revised and submitted for further field testing. If changes are not feasible, questions are discarded.

Questions and question sets that prove successful in field testing are considered for inclusion in a diploma examination.

Constructing the Examinations

The diploma examinations are composed of questions and/or question sets that have proven to be valid in field testing. For each diploma subject, three parallel examinations are developed annually for administration in January, June, and August. The three examinations are designed to be parallel in form and equivalent in difficulty. Each examination is constructed according to the approved blueprint (i.e., each will have approximately the same number of questions testing a particular facet of the curriculum as specified by the blueprint). An information bulletin outlining the design, format, and marking criteria for each diploma examination subject is distributed to schools at the beginning of each school year. The information bulletins include changes from previous years' examinations, sample questions, and scoring guides.

Approving the Examinations

Once a final form of a diploma examination is drafted, it receives extensive editing, proofreading, and technical checking. The examination developers from the Student Evaluation Branch present the final form of each examination to the Alberta Education committee that

represents the Curriculum Branch or Language Services Branch and Regional Offices of Alberta Education for review and recommendations for improvement.

The recommendations of the Alberta Education committee are incorporated into any additional revisions that are necessary. The examination developers then present the examination to the Examination Review Committee that recommended approval of the examination blueprint in the second phase of the examination development process. The Examination Review Committee conducts a final review of the proposed examination and recommends approval to the Director of the Student Evaluation Branch.

Printing and Administering the Examinations

Following the Director's approval of the final form of a diploma examination, examination developers ensure completion of additional quality checks that include editing, proofreading, validating of correct answers by a teacher committee, checking print quality of art work and illustrations, confirming precise match to the blueprint, and completing a final estimate of difficulty for each question.

Each examination is printed and then distributed to schools just before the administration dates.

Schools are responsible for ensuring the security of examinations before administration and for ensuring that examinations are administered according to regulations. Each school receives extra copies of the January and June examinations for use in the school.

Diploma examinations are scheduled annually in January, June, and August, and are conducted according to examination regulations. Schedules and regulations are published in the *General Information Bulletin* that is distributed to schools each fall.

The August examinations are confidential and therefore remain secured.

Students identified as having learning and/or physical disabilities may apply for special provisions for examination writing. Special provisions include brailled examinations, large-print examinations, tape-recorded examinations, additional writing time, use of a word processor, use of a tape recorder for responses, and use of a sign language translator. The complete policy for special provisions is printed in the *General Information Bulletin* and is available on request from the Student Evaluation Branch (telephone 427-0010). Following administration, completed examinations are shipped (in accordance with security regulations) to Alberta Education in Edmonton for processing and marking.

Marking the Examinations

Markers for the written-response parts of the examinations are teachers nominated by their superintendents and are selected on a proportional basis so that the percentage of markers selected from a geographic area is comparable to the percentage of papers from that area. To be selected for marking, a teacher must be currently teaching the subject he or she wishes to mark, must have taught the course for at least two years, and must possess a valid Alberta Permanent Professional teaching certificate.

Selected classroom teachers are trained in the marking procedures and are supervised during the marking session by the professional staff from the Student Evaluation Branch.

The written-response parts of the diploma examinations are all marked centrally. All student and school identification is removed from the papers before the marking so that markers have no means of knowing the source of a paper. Written-response papers in English 30, English 33, Social Studies 30, and Français 30 receive three independent readings and are scored in several categories such as quality of language and expression, thought and detail, organization. Students' scores are then calculated by computer. The **median** score on each dimension is the score awarded. Papers receive a fourth reading on dimensions where the original three markers' scores are not sufficiently congruent. Multiple-choice responses are computer scored. During the marking session, each multiple-choice examination is carefully reviewed by a group of at least 20 teachers of the subject under consideration. In this "standard-confirming" review, the teachers assess the appropriateness of the standard of achievement built into the examinations.

Analyzing and Reporting the Results

The statistical results of each examination and the recommendations of the standard confirmers are carefully analyzed. The Examination Review Committee may be asked to review the results as well. Reports of local results in each subject are prepared for all school jurisdictions.

Individual student results are mailed about one month after the date on which the examinations were administered. Students who are dissatisfied with their results in any subject may request that their examination in that subject be rescored. The fee for rescoring, including GST, is $21.40 per examination. The mark awarded after the rescoring supersedes the initial mark.

For more information, call the Assistant Director of Examination Development for Language Arts and Social Studies or the Assistant Director of Examination Development for Mathematics and Sciences at 427-0010.

Appendix B
Guidelines for Interpreting and Using the Results of the Diploma Examinations

Use of the Reports

In addition to this *Diploma Examinations Program Annual Report*, superintendents and principals receive a confidential report of results achieved by the students in their jurisdictions or schools. Superintendents may also request similar reports for instructional groups within the school jurisdiction.

Educators in each jurisdiction are encouraged to study the examination results carefully and use them to determine the strengths and weaknesses of their program and resources.

The jurisdiction, school, and instructional group reports may be used to help:

- evaluate education programs in each course
- improve the quality of education programs
- identify the strengths and weaknesses of the individual student, school, and jurisdiction by comparing their results with provincial results.

Administrators in each jurisdiction should apply separate locally developed teacher, school, and school system evaluation policies to the tasks of evaluating teacher and school performance. These reports are *not* intended to be used as the basis for:

- evaluating teacher performance, or
- comparing performance between or among schools.

The information provided in the reports is factual regarding *what* has happened. The interpretation of this information involves many complex considerations of the factors and variables that contribute to achievement.

Factors Limiting the Interpreting of Examination Results

Educators who are interpreting diploma examination results must take into account the following limitations:

1. School-awarded marks and diploma examination marks are complementary measures. The purpose of the examination is to provide a common measure of achievement for students throughout the province. School-awarded marks should reflect *all* important aspects of learning in a course, including those that cannot be measured by time-limited, paper and pencil tests. Therefore, differences are to be expected between a student's school-awarded mark and that student's diploma examination mark in a course. Any comparisons of the two marks should be restricted to group statistics for groups of reasonable size and should be made with full knowledge of the differences between the two measures.

2. The differences between provincial results and local results are affected by the size of the jurisdiction, the school, and the group.

3. Final course mark distributions cannot be directly compared to school-awarded mark distributions or to diploma examination mark distributions.

4. Factors affecting student selection of diploma examination courses vary from school to school. These factors must be considered when comparing school or jurisdiction marks with provincial marks:

   - Some schools may have a limited selection of courses. Students with weak academic records who, in other schools, would have selected non-examination courses will find it necessary to take diploma examination courses for credits.
   - Some schools may have a policy of encouraging students to challenge any diploma examination course, which results in a higher-than-usual proportion of students taking those courses.
   - Some schools may have a policy of discouraging students with weak academic records from enrolling in particular diploma examination courses, which results in a lower-than-usual proportion of students taking those courses.

Factors That May Affect Student Achievement

Many factors or variables may contribute to student achievement, some of which are:

1. **Environment**
   - community environment
   - school environment
   - socioeconomic background
   - family circumstances

2. **Student Factors**
   - ability
   - attitude
   - motivation
   - aspiration
   - academic background
   - learning style

3. **Resources (availability and appropriateness)**
   - programs of study
   - teacher resource manuals
   - resource materials
   - library services
   - current textbooks
   - references

4. **Instruction**
   - qualifications of teachers
   - teacher experience

- professional development
- teacher morale
- teaching strategies
- hours of instruction
- staff turnover
- amount of homework assigned
- communication of teacher expectations.

A Systematic Approach for the Effective Use of Diploma Examination Results

Diploma examination results can be used constructively as one means of improving the quality of education. A systematic use of these results would include the following steps:

1. Comparing test results for a school or instructional group with the provincial results. Be sure that your comparisons include the:
   - total test score
   - total machine-scored and written-response scores
   - subscale scores for machine-scored and written-response questions (this current administration as well as results over time)
   - individual machine-scored and written-response question results.
2. Noting any patterns, anomalies and/or interrelationships in the results.
3. Hypothesizing relationships between your observations and any of the factors above that may have had an effect on achievement.
4. Considering and implementing a plan that will help improve the quality of education for students.

An Administrative Model for the Effective Use of Examination Results

The following model may be useful for those who wish to develop a constructive system for interpreting diploma examination results. This model is based on work done by Medicine Hat School District #76.

Basic Principles

1. It is desirable and feasible to ask teachers and school administrators to take responsibility for analyzing and using provincial test results.
2. The development of analysis statements and action plans by individual schools is a more productive and positive activity than generalizations made by an external source.
3. There are identifiable groups of factors which affect student achievement that should be analyzed and commented upon when reviewing the results of each test.
4. Subtest results are often more informative than are total test scores.
5. Generalizations should be based upon long-term data.
6. It is not necessarily desirable or productive to compare the marks of schools with one another.
7. Standardized tests measure a core of the program being taught. However, some skills and concepts not measured are worth teaching and learning.
8. Ensuring that there is an alignment between the objectives of the curriculum being taught and the test measures being used will increase the level of students' success.
9. Written reports, follow-up by means of written response, and occasional face-to-face meetings are useful means of ensuring that results are appropriately interpreted and used.

Suggested Content for Interpreting Individual School Results

1. Subject, name, grade level, and administration date of the examination(s)
2. Number of students who wrote the examination
3. Profile of students who wrote the examination:
   - noteworthy individual characteristics
   - general or group characteristics
   - previous performance in other years
4. Retention rates: the number of students enrolled in the grade or subject in the previous two years
5. School performance as compared with district and provincial averages
6. Present school performance as compared with previous years
7. Subtest results: a discussion of how students performed on each of the subtests, possible reasons for results, and recommended action
8. Item analysis: those items where a significant number of students chose a response other than the correct answer; i.e., do the resources being used appropriately present the material being tested?
9. Program emphasis:
   - hours of instruction
   - skills and content emphasized or de-emphasized
10. Instructional practice:
    - methodology
    - curriculum fit
    - resources
11. Program objectives that are not measured by paper-and-pencil tests but that are worth teaching
12. Recommendations for next year: a list that describes actions that should continue to occur, should be enhanced, or should be changed
13. Summary report: general concluding comments regarding the analysis, report, examination, and recommendations
14. Name and signature of teacher or department head and principal.

Suggested Procedures for Reporting

1. Teachers, department heads, and/or principals analyze and prepare a written report about each administration of a diploma examination.

2. Principals review and sign the report.

3. The report is shared with central office supervisory personnel.

4. The appropriate central office supervisory personnel prepare a written response to the report and send copies of the response to the teacher, department head, and principal.

5. If possible, all involved staff meet to discuss the report and the response.

6. When necessary or desirable, a more immediate analysis of specific subtest scores may be requested for a specific class, grade, school, or examination.

7. A sampling of the reports will be shared with the Education/Personnel Committee of the board.

8. All reports will be used as an additional means of recognizing the quality of instruction being delivered to students. The analysis will be used to improve the program being offered and maximize the opportunities for students to be successful.

9. Where results are significantly different from those expected by school staff, consider arranging for a program evaluation that would measure such things as the variance between the program being offered and the specifications for an individual examination.

10. The report for the January and June administrations will include comprehensive retention rates for three years of the program.

Appendix C

Percentage Distribution of Marks in Diploma Examination Courses

January 1993*

Diploma Examination Course	School-Awarded Mark	Diploma Examination Mark	Final Course Mark	*January 1992 Final Course Mark*
ENGLISH 30			***N* = 10 657**	***N* = 10 514**
A (80-100%)	15.4	10.2	**10.9**	9.6
B (65-79%)	41.1	37.9	**42.4**	40.2
C (50-64%)	36.7	40.9	**42.3**	45.0
F (0-49%)	6.8	11.0	**4.4**	5.2
Mean	66.1	64.0	**65.6**	64.8
Standard Deviation	12.1	11.9	**10.8**	10.8
ENGLISH 33			***N* = 4 621**	***N* = 4 090**
A (80-100%)	4.8	7.0	**4.1**	3.2
B (65-79%)	34.3	43.3	**39.4**	38.5
C (50-64%)	49.1	38.0	**50.7**	52.8
F (0-49%)	11.8	11.7	**5.8**	5.5
Mean	60.9	63.6	**62.8**	62.5
Standard Deviation	11.2	11.5	**9.6**	9.3
FRANÇAIS 30 **			***N* = 55**	***N* = 11**
A (80-100%)	34.5	14.6	**14.6**	n/a
B (65-79%)	49.1	50.9	**72.7**	n/a
C (50-64%)	16.4	30.9	**12.7**	n/a
F (0-49%)	0.0	3.6	**0.0**	n/a
Mean	75.0	67.9	**71.7**	n/a
Standard Deviation	8.7	10.2	**8.3**	n/a
SOCIAL STUDIES 30			***N* = 8 735**	***N* = 8 696**
A (80-100%)	16.5	12.2	**13.1**	14.6
B (65-79%)	39.4	31.3	**35.8**	37.7
C (50-64%)	38.2	35.1	**42.6**	40.0
F (0-49%)	5.9	21.4	**8.5**	7.7
Mean	66.5	62.0	**64.6**	65.4
Standard Deviation	12.0	14.4	**12.4**	12.5

**The figures may change slightly as a result of appeals of school-awarded marks, rereads of diploma examinations, or special cases considerations.*

*** The January 1992 results for Français 30 are not reported because only 11 students received final blended marks.*

(continued)

Percentage Distribution of Marks in Diploma Examination Courses

Diploma Examination Course	January 1993* School-Awarded Mark	Diploma Examination Mark	Final Course Mark	*January 1992 Final Course Mark*
MATHEMATICS 30			***N* = 10 609**	***N* = 9 233**
A (80-100%)	23.6	18.8	**19.2**	19.3
B (65-79%)	34.0	29.0	**33.5**	32.3
C (50-64%)	33.4	32.1	**37.5**	36.8
F (0-49%)	9.0	20.1	**9.8**	11.6
Mean	67.5	63.8	**66.1**	65.5
Standard Deviation	14.3	16.7	**14.5**	14.7
BIOLOGY 30			***N* = 9 919**	***N* = 9 228**
A (80-100%)	20.0	20.3	**19.7**	18.8
B (65-79%)	36.1	31.1	**34.1**	32.5
C (50-64%)	35.5	29.8	**35.8**	37.2
F (0-49%)	8.4	18.8	**10.4**	11.5
Mean	66.7	64.5	**66.1**	65.3
Standard Deviation	13.1	16.0	**14.0**	14.4
CHEMISTRY 30			***N* = 8 082**	***N* = 7 462**
A (80-100%)	23.0	22.8	**21.5**	21.6
B (65-79%)	38.2	33.7	**38.0**	35.6
C (50-64%)	30.9	26.3	**31.8**	33.5
F (0-49%)	7.9	17.2	**8.7**	9.3
Mean	68.1	65.9	**67.5**	67.0
Standard Deviation	13.5	15.8	**13.9**	14.2
PHYSICS 30			***N* = 3 333**	***N* = 3 338**
A (80-100%)	26.8	28.1	**26.3**	23.2
B (65-79%)	40.1	28.9	**36.0**	39.4
C (50-64%)	27.1	24.6	**28.8**	29.6
F (0-49%)	6.0	18.4	**8.9**	7.8
Mean	69.8	66.8	**68.8**	68.4
Standard Deviation	13.2	18.0	**14.8**	13.7

* *The figures may change slightly as a result of appeals of school-awarded marks, rereads of diploma examinations, or special cases considerations.*

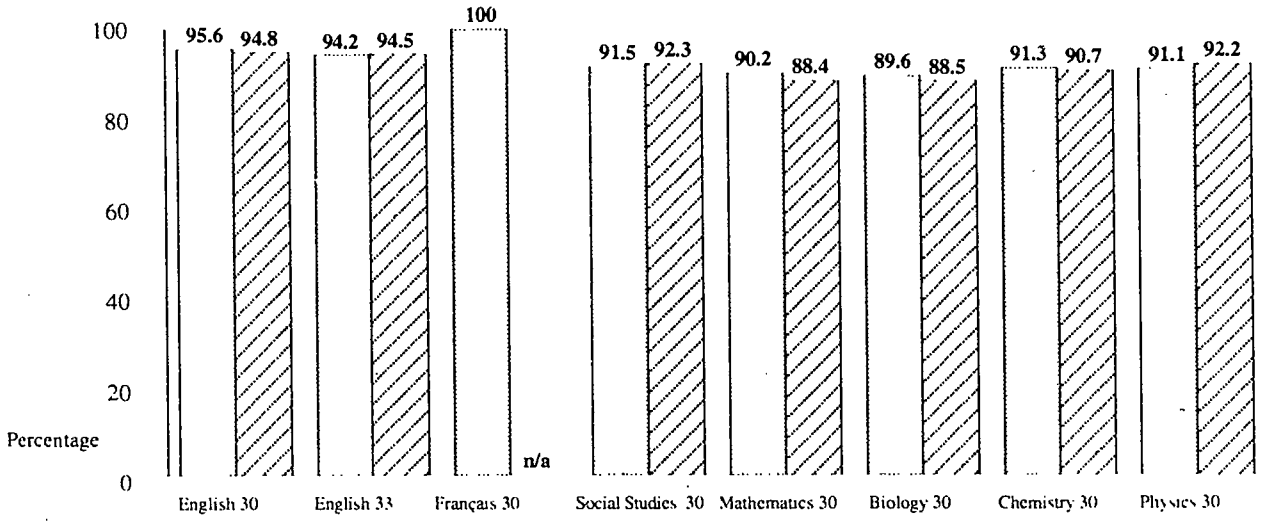
** *These are the results after adjustment. Students' marks were calculated out of 60 rather than 70 to adjust for the time needed to write the examination.*

Diploma Examination Courses
Final Course Marks

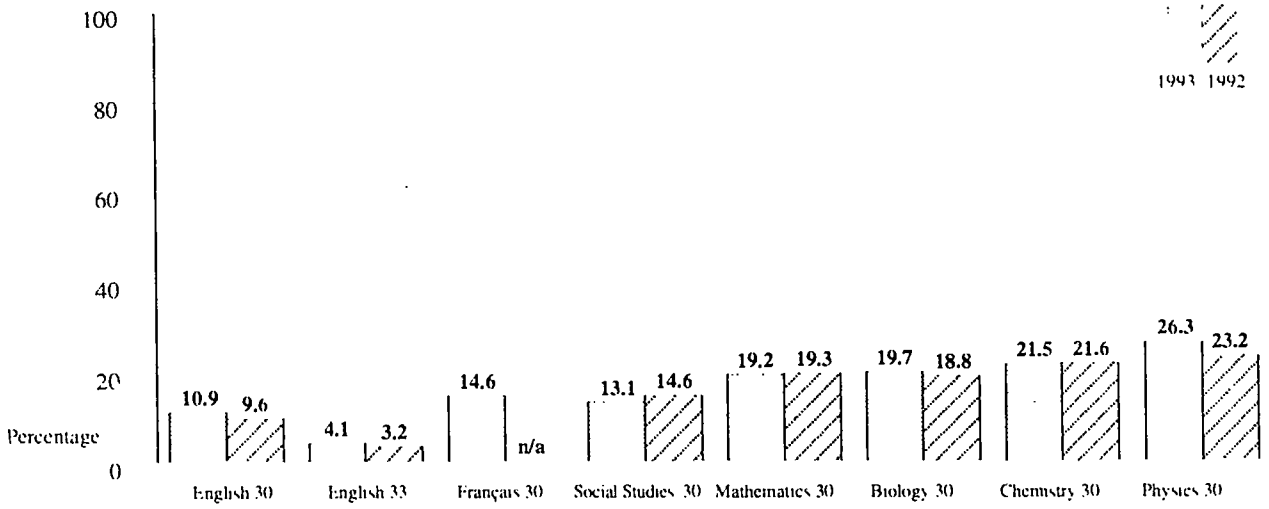
January 1993 and January 1992

1993 1992

Percentage of Students Achieving Acceptable Standard
(Final Course Marks of 50% to 100%)



Percentage of Students Achieving Standard of Excellence
(Final Course Marks of 80% to 100%)



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Percentage Distribution of Marks in Diploma Examination Courses

Diploma Examination Course	June 1993* School-Awarded Mark	Diploma Examination Mark	**Final Course Mark**	*June 1992 Final Course Mark*
ENGLISH 30			***N* = 14 473**	*N* = 14 176
A (80-100%)	19.1	8.4	**10.4**	13.2
B (65-79%)	40.0	32.5	**39.4**	41.8
C (50-64%)	33.7	44.1	**44.7**	40.3
F (0-49%)	7.2	15.0	**5.5**	4.7
Mean (%)	67.0	61.9	**64.9**	66.2
Standard Deviation (%)	12.7	12.2	**11.2**	11.3
ENGLISH 33			***N* = 5 375**	*N* = 5 140
A (80-100%)	5.4	3.9	**2.5**	3.1
B (65-79%)	31.4	35.0	**33.1**	35.1
C (50-64%)	49.0	43.7	**55.5**	53.9
F (0-49%)	14.2	17.4	**8.9**	7.9
Mean (%)	60.2	60.5	**60.8**	61.6
Standard Deviation (%)	11.7	11.6	**9.8**	9.7
FRANÇAIS 30			***N* = 44**	*N* = 73
A (80-100%)	13.6	2.3	**4.5**	6.9
B (65-79%)	59.1	54.5	**59.1**	57.5
C (50-64%)	27.3	34.1	**34.1**	35.6
F (0-49%)	0.0	9.1	**2.3**	0.0
Mean (%)	68.8	63.3	**66.2**	68.6
Standard Deviation (%)	9.1	10.5	**9.0**	9.2
SOCIAL STUDIES 30			***N* = 12 735**	*N* = 12 395
A (80-100%)	21.3	12.1	**14.8**	15.1
B (65-79%)	37.3	31.3	**35.2**	35.2
C (50-64%)	34.7	35.0	**41.0**	39.7
F (0-49%)	6.7	21.6	**9.0**	10.0
Mean (%)	67.5	61.8	**65.0**	64.8
Standard Deviation (%)	12.8	14.6	**12.9**	13.1

** The figures may change slightly as a result of appeals of school-awarded marks, rereads of diploma examinations, or special cases considerations.*

(continued)

Percentage Distribution of Marks in Diploma Examination Courses

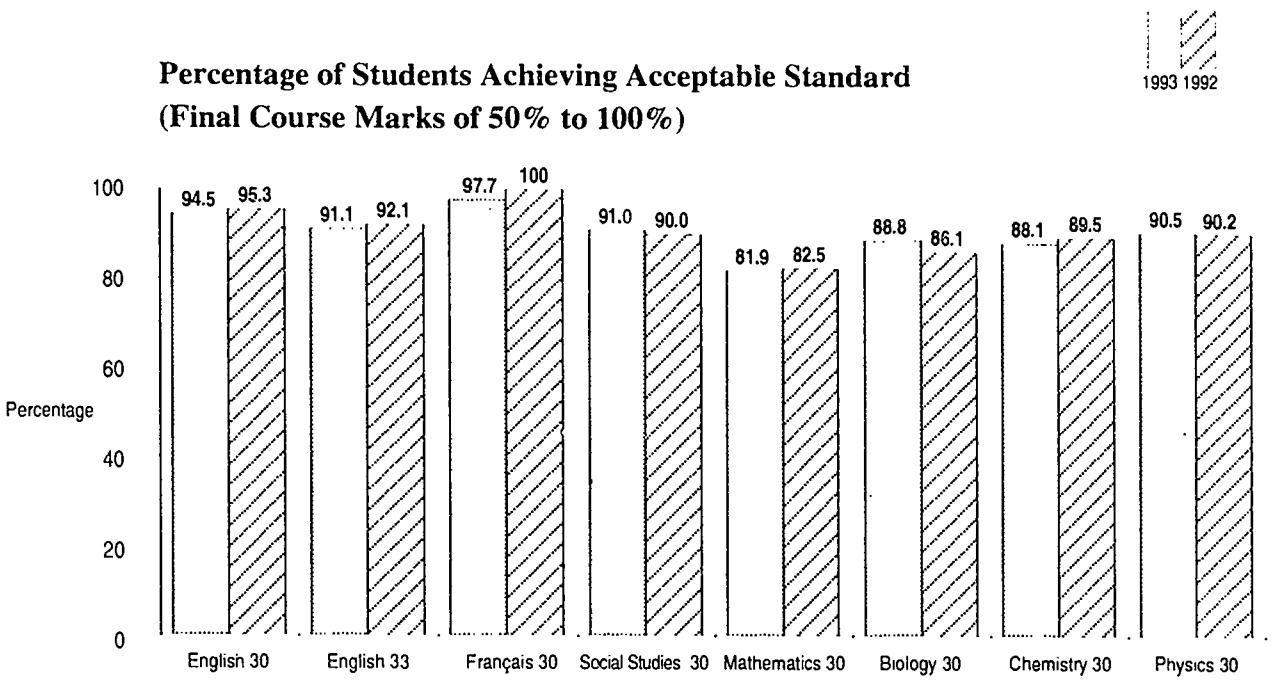
Diploma Examination Course	June 1993* School-Awarded Mark	Diploma Examination Mark	Final Course Mark	June 1992 Final Course Mark
MATHEMATICS 30			**N = 10 676**	N = 10 749
A (80-100%)	21.8	14.6	**16.5**	14.2
B (65-79%)	33.2	21.7	**28.1**	28.8
C (50-64%)	34.0	31.0	**37.3**	39.5
F (0-49%)	11.0	32.7	**18.1**	17.5
Mean (%)	66.4	58.3	**62.7**	65.1
Standard Deviation (%)	14.6	18.1	**15.5**	15.0
BIOLOGY 30			**N = 12 050**	N = 11 470
A (80-100%)	23.8	22.2	**22.2**	20.6
B (65-79%)	34.5	28.9	**32.4**	30.5
C (50-64%)	33.0	28.0	**34.2**	35.0
F (0-49%)	8.7	20.9	**11.2**	13.9
Mean (%)	67.6	64.4	**66.4**	65.2
Standard Deviation (%)	13.8	16.9	**14.7**	15.2
CHEMISTRY 30			**N = 9 166**	N = 8 980
A (80-100%)	26.7	18.3	**20.7**	22.5
B (65-79%)	35.5	29.9	**34.9**	35.0
C (50-64%)	29.4	30.6	**32.5**	32.0
F (0-49%)	8.4	21.2	**11.9**	10.5
Mean (%)	68.7	63.1	**66.3**	67.1
Standard Deviation (%)	14.3	16.9	**14.8**	14.7
PHYSICS 30			**N = 5 182**	N = 4 953
A (80-100%)	32.0	24.1	**26.0**	25.1
B (65-79%)	37.9	27.1	**34.6**	35.7
C (50-64%)	24.6	28.1	**29.9**	29.4
F (0-49%)	5.5	20.7	**9.5**	9.8
Mean (%)	71.1	64.9	**68.4**	68.1
Standard Deviation (%)	13.6	17.6	**14.8**	14.8

** The figures may change slightly as a result of appeals of school-awarded marks, rereads of diploma examinations, or special cases considerations.*

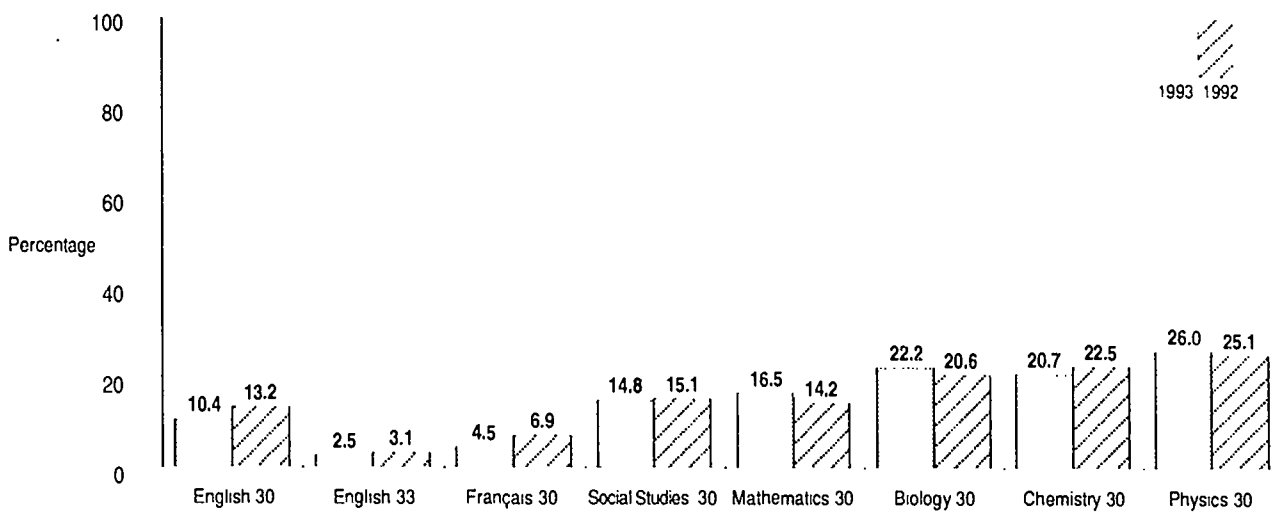
Diploma Examination Courses
Final Course Marks

June 1993 and June 1992

Percentage of Students Achieving Acceptable Standard
(Final Course Marks of 50% to 100%)



Percentage of Students Achieving Standard of Excellence
(Final Course Marks of 80% to 100%)



Diploma Examinations Program
Annual Report Questionnaire

The Student Evaluation Branch strives to produce documents that will be useful to educators. The purpose of this questionnaire is to collect your opinions about the *Annual Report*. All opinions will be considered when the content and format of the report are reviewed before the production of the next issue.

Please take a moment to respond to the questions and send to:

Jim Brackenbury
Assistant Director, Analytical Services
Student Evaluation Branch
Alberta Education
11160 Jasper Avenue
Edmonton, Alberta T5K 0L2
FAX: 422-4200

Your Use of the 1992-93 Annual Report

1. Check the boxes that apply to you.

   Currently, I am primarily a

   - teacher ☐
   - school administrator ☐
   - central office administrator ☐
   - school board member ☐
   - other (please specify) _____

2. I read the report, but I DID NOT use it to interpret my students' results. ☐

3. I read the report, and I used it to interpret students' results in

   - my classroom ☐
   - my school ☐
   - my jurisdiction ☐

4. If you checked one of the three boxes in question 3, please respond to this question.

   I used the results to alter the education program in

   - my classroom ☐
   - my school ☐
   - my jurisdiction ☐

Continued

Content of the Report

1. Please check the appropriate box to indicate your assessment of each section of this report.

	Very Useful	Adequately Useful	Somewhat Useful	Not Useful
Section 2: Summary of Results	☐	☐	☐	☐
Section 3: Results by Gender	☐	☐	☐	☐
Section 4: Results for Population Subgroups	☐	☐	☐	☐
Section 5: Special Study: Conventions of Language	☐	☐	☐	☐
Section 6 : Achievement-Over-Time Studies	☐	☐	☐	☐
Section 7: Examiners' Annual Summary Statements	☐	☐	☐	☐

Format of the Report

1. Please check the appropriate box to indicate your assessment of the report's format.

	Very Useful	Adequately Useful	Somewhat Useful	Not Useful
Organization into Separate Sections	☐	☐	☐	☐
Triple-Column Presentation of Text	☐	☐	☐	☐
Presentation of Figures	☐	☐	☐	☐
Presentation of Tables	☐	☐	☐	☐
Blending of Information in Text, Figures, and Tables	☐	☐	☐	☐

2. Further comments on this report are most welcome. Please use the space below for that purpose, or write to the Assistant Director, Analytic Services, Student Evaluation Branch.