

3.05—Curriculum Development and Implementation

BACKGROUND

The *Education Act* gives the Minister of Education broad authority over the “courses of study that shall be taught” to the province’s 1.4 million elementary and 700,000 secondary students in its 4,000 elementary and 800 secondary schools. The province’s 72 school boards are responsible for ensuring that their staffs comply with provincial policy on education and for helping teachers to improve their teaching practices and to deliver the curriculum effectively. School boards, through their trustees, are also accountable to the local electorate for the quality of education provided.

The process of reforming elementary and secondary education started with the creation of the Royal Commission on Learning by an Order-in-Council in May 1993. In response to the recommendations of the Royal Commission in December 1994, to the recommendations in our *1993 Annual Report*, and to public concerns about the quality of education, the Ministry of Education assumed full responsibility for curriculum policy and in 1996 undertook, for the first time, the development of a province-wide curriculum. The new elementary curriculum was introduced concurrently for all grades in September 1997 and 1998, while the new four-year secondary school curriculum was introduced one grade at a time, starting with the grade 9 curriculum in September 1999 and ending with the grade 12 curriculum in September 2002. The first students to graduate from secondary school after having been taught the new curriculum since grade 1 will be the 2009/10 cohort.

The Ministry estimated the costs of developing the new curriculum policy documents to be about \$16 million between 1996 and 2000. It estimated that total implementation costs incurred between 1997 and January 31, 2003, were about \$472 million, as outlined in the following table.

**Estimated Costs of Implementing the
New Curriculum from 1997 to January 31, 2003**

	(\$ million)
New textbooks and learning resources ¹	301
Training for educators	80
Teacher resource materials	70
New report card	12
Ministry staffing costs	9
Total	472

¹ Includes \$14 million from the federal government for French-language education.

Source of data: Ministry of Education

Responsibility for curriculum policy and education programs rests primarily with the Curriculum and Assessment Policy Branch of the Strategic Planning and Elementary/Secondary Programs Division, and the French Language Policy and Programs Branch of the French-Language Education and Educational Operations Division, as set out in the following table.

Curriculum Responsibility and Resources

Branch	2002/03	
	Staff Complement	Budget (\$ 000)
Curriculum and Assessment Policy	42	35,363*
French-Language Policy and Programs	16	11,157*

* Over 90% of these expenditures are for grants and service contract payments made to school boards, educational associations, and publishers for curriculum- and learning-resource-related projects.

Source of data: Ministry of Education

In response to a recommendation by the Royal Commission, the Education Quality and Accountability Office (EQAO) was established as a Crown agency in 1996. The EQAO's Board of Directors reports to, and operates under a Memorandum of Understanding with, the Minister of Education. Its main responsibilities are to evaluate and publicly report on the quality and effectiveness of elementary and secondary school education in Ontario and on the public accountability of the province's school boards. The EQAO had expenditures of \$50.7 million for the year ended March 31, 2003.

AUDIT OBJECTIVES AND SCOPE

The objectives of our audit were to assess the adequacy of the Ministry's procedures for:

- ensuring that its curriculum meets the province's objectives for the education of students and that it is implemented cost effectively; and
- measuring and reporting on the effectiveness of both curriculum content and implementation and, where necessary, ensuring that appropriate corrective action is taken.

Our audit focused primarily on the related activities of the Ministry's Curriculum and Assessment Policy Branch and the French Language Policy and Programs Branch. We also interviewed EQAO personnel to gain an understanding of their procedures for conducting and reporting on the results of province-wide testing as well as other activities they have undertaken to fulfill their mandate. In addition, we interviewed administrative personnel and reviewed policy and other documentation at three English-language school boards and one French-language school board and interviewed a sample of principals and teachers, primarily from these school boards.

We identified audit criteria that would be used to conclude on our audit objectives. These were discussed with and agreed to by senior management of the Ministry and the EQAO.

Our audit was carried out from September 2002 to June 2003. The Ministry's Internal Audit Services Branch had not done any recent work that allowed us to reduce the scope of our work.

Our audit was conducted in accordance with professional standards for assurance engagements, encompassing value for money and compliance, established by the Canadian Institute of Chartered Accountants, and accordingly included such procedures as we considered necessary in the circumstances.

OVERALL AUDIT CONCLUSIONS

We concluded that the process by which the Ministry developed the new elementary and secondary curriculum was appropriate and found that, according to most of the educators we interviewed, it resulted in a good-quality product that was an improvement over what they had before. However, the process of implementing the new curriculum and related reforms is ongoing, and the Ministry and school boards did not yet have sufficient assurance that:

- adequate procedures are in place to ensure that the 4,800 schools throughout the province are teaching the new curriculum, that students are being properly and consistently assessed, and that best practices have been implemented; and
- there is sufficient appropriate information to assess the performance and management of schools with respect to student achievement.

Although we found general satisfaction with the content of the new curriculum, educators we interviewed expressed concerns regarding the way it was implemented. Their major concern was that the Ministry rushed the implementation with the result that a new curriculum and changes in student assessment practices were introduced before appropriate training, textbooks, and other materials were readily available. This made the initial years of implementation extremely difficult for students and teachers.

Educators also expressed concerns about the suitability of the new curriculum for weaker students. Recent studies and test results indicated that many students are still not succeeding under the new curriculum and that revisions to the curriculum or teaching strategies or both are required to help these “at-risk” students succeed.

While the Ministry and the school boards we visited have introduced initiatives to assist at-risk students, we found that the Ministry had not provided adequate guidance regarding the promotion of at-risk students. At-risk elementary students are promoted or transferred to the next grade without upgrading their knowledge and skills by participating in remedial programs. As a result, many students are entering secondary school without the educational foundation required to graduate.

We also concluded that the Ministry and the school boards we visited did not have sufficient, reliable student performance and contextual data to compare and interpret student achievement results and consequently were not able to:

- measure and report on the extent to which students have learned the new curriculum in grades and subjects other than those that are tested by the EQAO;
- measure the extent to which consistency in student assessment has been achieved among the province’s 4,000 elementary and 800 secondary schools;
- identify and prioritize the problems underlying poor student achievement at under-performing schools, to develop viable improvement plans, and to measure and report on the extent to which the steps taken to improve student performance had been successful; and
- conduct the research necessary to address critical issues in curriculum delivery and provide the basis for informed decision-making.

The Ministry funded the development of course profiles and an electronic lesson planner to enable teachers to prepare lesson plans more efficiently and effectively. However, many teachers we interviewed did not consider these tools to be useful to them. Superintendents felt that a lack of computer literacy and access to computers was an impediment to increased use of these tools.

DETAILED AUDIT OBSERVATIONS

CURRICULUM DEVELOPMENT

Under the ministry policies and guidelines in place prior to the introduction of the new curriculum, school boards had considerable latitude regarding the curriculum that was taught, with the result that there was little consistency across the province. For example, for grades 10 to 13, the Ministry found that there were approximately 700 different courses across the province. (These have since been reduced to 184 standard secondary school courses.)

Coincident with the development of a new curriculum, the number of years of elementary and secondary schooling were reduced from 13 to 12, which is consistent with most other jurisdictions, and which was recommended by the Royal Commission on Learning in its 1994 report.

In establishing its new curriculum standards, the Ministry reviewed the curriculums of a number of other jurisdictions and took advice from, among others, a number of Ontario school boards, various subject associations (for example, the Ontario Association for Mathematics Education), and specialists in designated subject areas. In addition, for the secondary school curriculum, the Ministry established a validation process in which representatives from universities, colleges, business groups, the professions, and the trades assessed and ultimately approved the appropriateness of the learning expectations for post-graduation destinations: university, college, and the trades/workplace.

Structure of the New Curriculum

The Ministry's curriculum development process resulted in the publication of 41 curriculum policy documents in both English and French: 10 for elementary (including the Kindergarten Program) and 31 for secondary. The policy documents are organized into strands, which are broad areas of study or focus for each subject area in each grade (at the elementary level) and each course (at the secondary level). Each strand contains both overall and specific learning expectations describing the skills and knowledge the student is expected to acquire.

Each policy document also contains an achievement chart for each subject (at the elementary level) and for each discipline (at the secondary level). These charts are the framework used for assessment and evaluation of student achievement. They describe four different levels of achievement of the curriculum expectations. Level 3 (the second-highest level) is the provincial standard and identifies a high level of achievement of the provincial expectations.

The basic structure of the new elementary and secondary curriculums is set out in the following chart.

Structure of the Elementary/Secondary Curriculum

Grade 12	University Preparation Courses	University/College Preparation Courses	College Preparation Courses	Workplace Preparation Courses	Open Courses
Grade 11	University Preparation Courses	University/College Preparation Courses	College Preparation Courses	Workplace Preparation Courses	Open Courses
Grade 10		Academic Courses	Applied Courses		Open Courses
Grade 9		Academic Courses	Applied Courses		
Grades K–8	Elementary Subjects				

Source of data: Ministry of Education

In addition to the types of secondary school courses listed in the chart above, boards may offer:

- locally developed courses, with prior ministry approval, to serve local needs or interests, or the needs of special education students; and
- transfer courses to enable students who change their destination plans to upgrade their skills in a particular subject (for example, to change from Applied Math to Academic Math).

Students are expected to select their courses according to their ultimate destination. Thus, a student intending to study English at university would take University Preparation courses in English, but might take University/College or College Preparation courses in Mathematics. Academic courses in grades 9 and 10 serve as prerequisites for all four levels of grade 11 and 12 courses, whereas Applied courses do not satisfy prerequisite requirements for university preparation courses. Consequently, the majority of students choose academic courses in grades 9 and 10.

Views on Curriculum Content

The teachers and principals we interviewed supported the idea of having a province-wide curriculum. Almost all teachers we interviewed considered the new curriculum to be an improvement over what they had before, with more than 40% rating it as a major improvement. However, concerns were expressed that the new curriculum might not meet the needs of weaker students.

All the principals we interviewed believed that the new curriculum was as good or better for most students than what they had before. However, we received mixed views from principals on the suitability of the curriculum for weaker students at the elementary level and for the estimated one-third of secondary school graduates who join the workforce

directly. Several secondary principals we interviewed were also concerned that the work habits of their work-bound students had actually deteriorated since its introduction.

Conclusion on Curriculum Development Process

The process by which the Ministry developed the new elementary and secondary curriculums was designed to ensure that provincial objectives, such as establishing a challenging, rigorous curriculum with high provincial standards, would be met; appropriate expertise and stakeholder involvement was employed in its development; and the curriculums of jurisdictions that had recently undertaken curriculum reform were used as benchmarks. Its appropriateness for weaker students is discussed later in this report.

IMPLEMENTATION OF THE CURRICULUM

With respect to curriculum implementation, school boards are responsible for ensuring that their staffs comply with provincial policy on education and for helping teachers to improve their teaching practices and to deliver the curriculum effectively. Principals are responsible for supervising and evaluating the performance of teachers in providing the appropriate instruction for their students and in evaluating student work and progress. Procedures for ensuring that school boards and their staffs comply with legal and policy requirements and perform their roles effectively are discussed later in this report.

Implementation Problems

The general satisfaction that educators had with the content of the curriculum did not apply to the way in which it was implemented. The primary concern was that the Ministry rushed the implementation with the result that:

- Teacher training on the new curriculum and on use of the achievement charts for evaluating student work was not conducted early enough or, in some cases, at all. The Ministry's "train the trainer program" was not viewed as a success by most educators we interviewed, primarily because insufficient release time (that is, time off during the instruction day) was set aside to implement this program at the schools. The Ministry stated that, in addition to the two days of release time per teacher for training on the new curriculum that it funded at a cost of \$36 million, it expected teachers to do some of the required training on their own time.

In this regard, the Ministry noted that, between 1999 and 2001, approximately 22,000 teachers obtained training in the implementation of the new curriculum on their own time at the Summer Institutes. (The Institutes are workshops managed by the Ontario Teachers Federation and funded by the Ministry. They were initially established to assist teachers in upgrading their skills to implement the more rigorous curriculum. They have evolved into a more general professional-development vehicle for teachers and include topics such as classroom management in addition to subject-specific

courses.) Principals and superintendents stated that, because some of their teachers were either reluctant or unable to attend courses after hours during the school year or during the summer, the number of professional development (PD) days should be increased from four to at least eight per year.

- Appropriate textbooks and classroom materials were in many cases not available when classes commenced, making the initial years of implementation extremely difficult for students and teachers. However, the majority of teachers we interviewed indicated that this problem is being resolved over time as publishers introduce new textbooks and supporting materials. Suitable textbooks now exist for core English-language elementary and secondary subjects and courses. Availability remains an issue, however, for French-language grades 7 to 12—there are still a number of courses for which the Ministry has not yet approved a textbook—and for non-core courses such as visual arts in both languages.

Focus of Teacher Training

The primary ongoing concern of both teachers and principals whom we interviewed was training. The two most common suggestions made by teachers we interviewed regarding how training could be improved were to:

- offer more grade-level courses open to teachers from a number of schools, in order to provide opportunities to discuss successful instructional strategies and techniques with a wider range of colleagues; and
- (particularly emphasized by elementary teachers) orient courses more to the actual implementation of strategies and techniques rather than to the largely informational sessions that they had attended so far.

Use of Teacher Supports

The introduction of a province-wide curriculum to be used by all teachers, versus the variety of curriculums previously in use, made it practical for the Ministry to assist teachers in the delivery of the curriculum by funding the development of tools for common use, such as:

- *course profiles*, which were created, at a cost of \$33 million, by boards and subject associations to assist secondary teachers in delivering each course. The profiles build upon the specific learning expectations set out in the policy document for each course; provide teachers with a suggested sequence for presenting each concept; and specify the amount of time that should be devoted to each strand. They also include suggested teaching strategies and a list of resources that the teachers may want to consider using during the course. The profiles are available to teachers in electronic format so that they can customize and incorporate them into their lesson plans.

- *the curriculum unit planner*, a software tool that cost \$3 million to develop and is intended to enable both elementary and secondary teachers to efficiently develop lesson plans for each subject or course.

Despite the significant efforts by leading educators that went into developing the course profiles, only one-third of the secondary teachers who responded to our questionnaire rated the profiles as adequate in respect to usefulness. This result is consistent with the finding in the Ministry's June 2001 Mathematics Survey that teachers had not "used the course profiles to any extent." Only about 60% of the elementary and secondary teachers that we interviewed rated the unit planner as useful. Superintendents we interviewed thought that insufficient computer literacy was an impediment to greater use of these and other software tools. As well, teacher access to computers is an issue because school boards we visited did not provide teachers with PCs. We were told by the superintendents we spoke with that doing so is an objective but not a high priority one.

Recommendation

To help ensure that future revisions to the curriculum are implemented more effectively, the Ministry should ensure that:

- teachers receive appropriate training prior to implementation; and
- educational publishers have sufficient lead time to develop appropriate textbooks and classroom materials.

To help improve the implementation of the current curriculum, the Ministry should work with school boards to ensure that teachers receive more specific implementation training, including training on the use of tools such as the course profiles and unit planner.

Ministry Response

Teacher training and classroom resources are important components of an effective implementation plan.

The Ministry is pleased that the audit report recognizes that the process for developing the new curriculum was appropriate and that most educators the auditor interviewed consider the curriculum to be a high-quality product.

Over \$300 million was spent on textbooks and learning resources to support the new curriculum from kindergarten to grade 12 in both English and French. As a result of ongoing textbook development, an increasing number of grade 11 and 12 textbooks have since been made available for French-language core and non-core courses for the 2003/04 school year. If new funds were to be allocated to learning resources, ensuring the availability of appropriate textbooks for additional subjects and courses will be considered.

The Ministry is implementing a multi-year plan to sustain a quality curriculum. As part of our plan, we will continue to work with our educational partners to

ensure that teachers receive appropriate and timely training to implement future curriculum change. We will also work with our partners to identify areas for additional focused and practical training and with publishers and other interested stakeholders so they have the necessary lead time to develop appropriate resources to support curricular revision.

ADDRESSING THE NEEDS OF AT-RISK STUDENTS

One issue that teachers and principals raised regarding the content of the new curriculum was its suitability for weaker students. Educators stated that both the elementary and secondary curriculums cover more material and are more challenging than the old curriculums. This leaves less classroom time for students to master each concept, and as a result, weaker students may fall behind. By the time they enter secondary school, these students are at risk of being part of the 25% of students noted in the Ministry's October 2002 "Double Cohort Study—Phase 2 Report" who leave school without obtaining an Ontario Secondary School Diploma.

Promotion without Remediation

We found that there was strong agreement among the teachers we interviewed that students need to perform at least at level 2 (60-69%) in a subject in order to have a sufficient understanding of the key learning expectations to succeed in subsequent grades. The Ministry, however, has set the pass rate at level 1 (50-59%), with the result that students at this performance level are promoted to the next grade without any requirement that they take steps to raise their understanding of key concepts to at least level 2 by attending summer school or doing other remedial work.

Under the *Education Act*, promotion decisions are made primarily by principals. We were told by the elementary school principals we interviewed that even students who perform below level 1 are normally transferred to the next grade. This practice is known as "social promotion." Although teachers and principals might recommend that these students upgrade their knowledge and skills through summer school or other remedial programs, they do not require them to do so as a condition of being promoted. The Ministry stated in its 2001/02 business plan that it intended to require that schools promote only those students who achieved at an acceptable level, that is, one that would ensure that they had the skills and knowledge needed to progress through the education system. However, no action was taken to implement this intention.

None of the boards we visited tracked and monitored the extent to which students who achieved below level 2 participated in remedial programs or the impact of such programs on students' subsequent performance. One administrator who co-ordinated all the remedial programs at one of the boards stated that the proportion of at-risk students who took

advantage of the board's remedial programs was quite low, and that it varied significantly among the board's schools. Low participation in remedial programs may be a major reason why at-risk students fail to acquire the knowledge and skills necessary to succeed at secondary school.

In the United States, the Chicago Public Schools (CPS), which ended social promotion in the 1996/97 school year, reported in 1999 that the percentage of grade 3, 6, and 8 students who had marks good enough to pass to the next grade increased to 82% from 76% in 1997. The chief executive officer of CPS stated that the improvement would not have happened without mandatory summer school for failing students coupled with the threat of being retained. Although other jurisdictions are experimenting with more stringent promotion policies, such as the mandatory summer school programs at the CPS, the Ministry has not introduced any policy directive pertaining to promotion decisions or remedial programs.

The results on the 2002 Ontario Secondary School Literacy Test (OSSLT) and the grade 9 math test confirm that many students have not acquired sufficient literacy and math skills. The OSSLT is designed to test only basic literacy skills, not students' comprehension of the secondary school curriculum. Yet 28% of first-time and 52% of previously eligible writers were unable to pass this basic skills test after nine and 10 years of schooling respectively. Students taking mostly Applied courses performed particularly poorly on the OSSLT, with a 62% failure rate among first-time eligible students.

Ontario Secondary School Literacy Test

	# of Students Writing		# of Students Failing		% of Students Failing		% Increase (Decrease)
	Feb/02	Oct/02	Feb/02	Oct/02	Feb/02	Oct/02	
First-time eligible students							
Academic program	66,577	98,668	8,655	14,945	13	15	2
Applied program	21,581	30,233	12,085	18,807	56	62	6
Program not specified	38,637	2,825	9,096	1,121	24	40	16
Locally developed programs	2,237	4,302	1,969	3,696	88	86	(2)
Overall results	129,032	136,028	31,805	38,569	25	28	3
Previously eligible students							
Required to pass reading only		10,385		5,075		49	
Required to pass writing only		5,848		776		13	
Required to pass both tests		17,075		11,430		67	
Overall results		33,308		17,281		52	
All Students Writing		169,336		55,850		33	

Source of data: EQAO

As shown in the table that follows, students taking Applied Mathematics also performed poorly on the 2002 EQAO grade 9 math test. Only 58% (37% level 2 + 21% level 3) were able to achieve the minimum level 2 performance that teachers feel is necessary to succeed in subsequent grades.

EQAO Grade 9 Math Test Results

	# of Students Writing	Exempt, or Not Enough Data to Score (%)	Below Level 2 (%)	Level 2 (%)	Level 3 (%)	Level 4 (%)
Applied 2000/01	41,973	21	40	26	13	0
Academic 2000/01	95,669	5	20	25	45	5
Applied 2001/02	47,220	15	27	37	21	0
Academic 2001/02	99,094	5	15	17	58	5

Source of data: EQAO

The test results for students taking Applied courses confirm that many of them are at-risk students. Educators variously attributed the lack of success of these students to a curriculum that is too hard, poor work habits and low motivation, and ineffective instructional techniques. The primary concern regarding poor work habits was the failure to complete assignments, a finding that was also noted in the Ministry's June 2001 Mathematics Survey. A study performed at one board, in connection with a doctoral thesis, also with respect to mathematics, found that secondary school teachers felt that social promotion in elementary school resulted in the affected students not having "the [necessary] background in Math" or the motivation to do the work required to succeed. In this regard, the teachers noted that some grade 9 students were unconcerned about their lack of math skills, "having the misperception that even if they did not understand the material, they would be promoted anyway, just like in elementary school."

With respect to the need to adopt different instructional techniques for students in applied courses, some of the secondary school math teachers interviewed in the above study noted that students in Applied Mathematics responded better to a different type of instructional method than that used in the traditional approach to teaching mathematics. Another study conducted by the same board to identify problems with the implementation of the new secondary school curriculum observed that "many teachers, especially new ones, have not the [instructional] strategies and tactics necessary to deal with students in Applied classes."

Ministry Initiatives Regarding At-risk Students

The Ministry introduced an Early Reading Strategy in 2001 to help teachers to better assist students in acquiring a strong foundation in this core skill area in grades 1 to 3. It also plans to introduce a similar Early Math Strategy for grades 1 to 3 and to expand the Early Reading Strategy to grade 6 beginning with the 2003/04 school year.

In November 2002 the Ministry assembled the At-Risk Working Group, composed of representatives from school boards and other major stakeholder groups, to provide the Ministry with recommendations to improve the performance of at-risk students. The recommendations in the Group's January 2003 report included: developing an inventory of

successful school practices in the areas of literacy and numeracy, the application of diagnostic assessments to identify and track at-risk students, and teacher training and information sharing on assessment and instructional methodologies.

In March 2003, the Ministry announced a \$50 million program to address the Group's recommendations. One of the objectives of this program and the Early Reading and Math Strategies is to address the problem of ineffective teaching strategies for at-risk students. However, these programs are not designed to address the deficiencies in student work habits that teachers believe are an important factor in poor performance at the secondary level.

In addition, in February 2003, the Ministry began a systematic review and update of all curriculum policy documents from grades 1 to 12. This review will be completed over a five-year period, starting with the Social Studies/History and Geography elementary curriculum and the Canadian and World Studies secondary curriculum. The appropriateness of the curriculum for Applied students will be considered as part of this review.

Recommendation

To help ensure that the curriculum serves the needs of all students, the Ministry should:

- **develop policy guidance governing the promotion of at-risk students, including ways to increase participation in remedial programs such as summer school, to help ensure that all students acquire the knowledge, skills, and work habits required to succeed in subsequent grades and ultimately to obtain an Ontario Secondary School Diploma; and**
- **require boards to track the participation of at-risk students in remedial programs and to assess the effectiveness of the programs in improving student performance.**

Ministry Response

Addressing the learning requirements of students at risk of not succeeding is a ministry priority. We are pleased that the audit report recognizes the Ministry's commitment to students who are at risk through initiatives related to the implementation of the recommendations of the At-Risk Working Group report, and the additional funding provided to support these initiatives.

The Ministry will provide support to principals to ensure effective promotion practices for at-risk students, including the possibility of participation in a range of remedial programs. The Ministry will work with boards to develop processes to track student participation in remedial programs and to assess how effective the programs are in improving student performance. We will introduce appropriate accountability measures relating to the at-risk student funding provided to boards. The Ministry is also committed to implementing

the recommendations related to remediation put forward by the At-Risk Work Groups and Expert Panels. The Ministry will continue to review the research on the impact of social promotion and student retention.

MONITORING CURRICULUM QUALITY AND IMPLEMENTATION

One of the recommendations made by the Royal Commission on Learning was that an agency, independent of the Ministry, should construct, administer, mark, and report on large-scale assessment of student achievement. It was the Commission's view that large-scale, system-wide testing was necessary "as a check on student learning at a few critical transition points, and as a vehicle for assuring people that, at those points, all students are being assessed according to the same yardstick."

Following this recommendation, the Education Quality and Accountability Office (EQAO) was established as a Crown agency in 1996. Its Board of Directors reports to, and must operate in compliance with, a Memorandum of Understanding (MOU) with the Minister of Education. The EQAO's legislated mandate is:

- to develop systems for evaluating the quality and effectiveness of elementary and secondary school education, including developing tests and administering and marking tests of pupils in elementary and secondary schools;
- to research and collect information on assessing academic achievement;
- to evaluate the public accountability of boards and collect information on strategies for improving that accountability; and
- to report on and make recommendations regarding the effectiveness of elementary and secondary school education and on the public accountability of boards.

The EQAO develops, administers, and marks two types of large-scale tests for the province's elementary and secondary students:

- the Ontario Secondary School Literacy Test (OSSLT), which is normally written in grade 10 and is used to determine whether students have acquired the basic literacy skills as expected at the end of grade 9; and
- grade 3 and 6 tests of reading, writing, and mathematics, and the grade 9 Academic and Applied mathematics tests, which are used to determine the extent to which students have achieved the learning expectations set out in the curriculum for these subject areas.

The EQAO is also responsible for managing and reporting on the province's participation in national and international tests. These tests show how well Ontario students acquired certain core knowledge and skills compared with students in other jurisdictions. As a history of results subsequent to the implementation of the new curriculum is developed, these test

results will serve as a competitive benchmark against which the quality of the Ministry's curriculum and its delivery by school boards can be assessed.

Despite its comprehensive mandate, the EQAO's activities have so far been limited to administering the aforementioned tests, reporting the results with some analysis, and providing guidance to school boards on improvement planning.

Validating the EQAO's Testing Practices

In addition to using comparisons of the annual EQAO results of schools to identify potential problems, multi-year, large-scale test results are intended to enable the Ministry and boards to monitor the trend in student performance over time in order to determine whether student achievement is improving, staying about the same, or declining.

Trends are meaningful, however, only if year-to-year results are comparable. Thus, the EQAO has procedures that are intended to ensure that year-to-year changes in the marks on its tests reflect changes in student performance rather than changes in the level of difficulty of the tests. The EQAO's test development process includes field tests to obtain assurance that each set of tests is of similar difficulty; however, this step alone cannot guarantee that each year's tests will be of the same level of difficulty. Consequently, the EQAO also uses a complex, statistically driven process known as "equating" to compensate for differences in test difficulty.

At the time of our audit, the EQAO's procedures for designing and reporting results on its large-scale tests had not been subjected to an independent examination by experts in the field of psychometrics. In view of the importance of the decisions that are based at least in part on EQAO results and the professional judgments required to design and administer complex testing processes, early in 2003 the EQAO engaged independent experts to review its processes. It is expected that the review will be completed by March 2004.

Achieving Consistency in Student Assessment

In connection with the introduction of a new curriculum, the Ministry implemented policies governing student assessment practices with the goals of:

- improving student learning;
- developing greater consistency in assessment and evaluation practices; and
- providing clarity in reporting.

Previously, boards had had considerable flexibility in their assessment practices. We were told at the schools we visited that practices had varied at the school level within boards and, at large schools, even within individual schools. During previous audits, we were told by admissions personnel at some universities that assessment practices varied so widely between secondary schools that it was necessary to develop processes for taking these differences into account in making admissions decisions.

To help meet its goals, the Ministry developed standard report cards and achievement charts that must be used by all schools. It also funded the development of: exemplars for both elementary and secondary subjects/courses; and an assessment and evaluation resource guide for secondary school teachers. The exemplars build on the achievement charts in the Ministry's policy documents and provide teachers with examples of actual student work that the specialist teams have evaluated as representing level 1 (50-59%), 2 (60-69%), 3 (70-79%), and 4 (80-100%) work. Because they use actual student work, the exemplars were not available until the year after the implementation of the curriculum and consequently will not be available for grade 12 courses until the 2003/04 school year. Exemplars were rated as being adequate or excellent by 82% of elementary and 71% of secondary teachers we interviewed.

The boards we visited have also undertaken measures, such as providing training for teachers and principals in student assessment, developing and publishing guides on appropriate assessment practices, and encouraging principals to place higher priority on ensuring that their teachers follow appropriate student assessment practices. However, neither the Ministry nor the boards we visited had implemented procedures for monitoring and reporting on the extent to which consistency in student assessment has been achieved.

We note that most of the principals and teachers we interviewed believed that consistency in assessment was improving within their individual schools. Particularly at the secondary level, though, they felt that board-wide consistency in student assessment had not been achieved.

One possible method of measuring consistency in assessment for at least some grades and subjects is to compare report card marks to student performance on the grades 3, 6, and 9 EQAO tests. Although effective classroom assessment will involve a wider variety of assessment approaches at more frequent intervals, the expectation would be that the final report card marks of most students in reading, writing, and math for grades 3 and 6, and in math for grade 9, would be comparable to their EQAO test marks. The superintendents we interviewed advised us that their boards planned to do this once the EQAO begins reporting student marks using the Ontario Education Number, the unique identifier for each student that the Ministry plans to introduce in September 2003.

One way to obtain additional benchmark information for assessing consistency in student assessment in other grades and subjects would be to implement additional EQAO tests on all core subject areas at key points, such as grade 8 and 12 exit tests. For example, Alberta administers grade 12 diploma exams that count for 50% of students' final marks in 12 core courses. Alternatively, province-wide exams could be used in place of class or school exams, particularly if accompanied by independent team marking. Such exams would thus provide a benchmark against which other classroom assessments could be compared. We note that the superintendents we spoke with could not describe any benefits to having more than 4,000 different exams across the province for the same subject at the elementary level and 800 or more exams for the same course at the secondary level, given that all exams are expected to assess achievement of the same learning expectations.

Gaps in Student Achievement Information

As well as providing benchmark information for assessing consistency, the use of province-wide classroom exams or additional EQAO tests would help solve the problem of insufficient information about student achievement levels, particularly in secondary schools. As the Task Force on Effective Schools noted in its June 2001 report, “At the secondary level . . . we know almost nothing on a province-wide basis about achievement levels. The available information comes from teachers and from examinations set by individual schools, and very often by individual teachers. The new grade 9 math test and the grade 10 literacy test administered by the EQAO will tell us more about students’ elementary education than about their achievements at the secondary level.” As of 2003, this was still very much the case.

Strengthening Implementation Processes

The Ministry and school boards were still in the process of implementing the new curriculum and related reforms. We concluded that they did not yet have sufficient assurance that:

- adequate procedures are in place to ensure that the 4,800 schools throughout the province are teaching the new curriculum, that students are being properly and consistently assessed, and that best practices have been implemented; and
- appropriate accountability frameworks are in place—for example, the Ministry does not know whether trustees and school councils receive adequate information to assess the performance of their managements and schools with respect to curriculum implementation and student achievement, or whether if they do get such information, they use it properly.

Such assurance could be obtained by conducting accreditation reviews such as those recommended by the Task Force on Effective Schools in its June 2001 report. The Task Force recommended that an agency at arm’s length from the Ministry design and implement an accreditation process for school boards and schools. The recommended scope of the accreditation examinations included:

- the process used by boards to review their schools’ performance and curriculum delivery;
- the adequacy and accuracy of information about student performance;
- the process by which resources were allocated by the board to support student learning; and
- the adequacy of board and school improvement plans.

The scope of the first two items could be expanded to include student assessment practices and would thereby provide additional information on and more confidence regarding the consistency across the province.

If a system of province-wide subject and course exams accompanied by reviews of school assessment practices helped achieve the Ministry's consistency objective, the Ministry would then be in a position to reconsider the need for large-scale testing by the EQAO.

We also note that having comparable student performance results among the schools of each board, and especially among all schools within the province, would provide schools, school boards, and the Ministry with valuable information for identifying problems and best practices and would also help trustees and school councils hold their managements and principals accountable for results.

The Ministry has not acted upon the recommendation by the Task Force.

Measuring Outcomes

While the Ministry publishes the province's ranking on national and international tests as an indicator of its performance regarding curriculum quality, neither the Ministry nor the EQAO has developed outcome-oriented measures of effectiveness for the elementary/secondary education system. Some possible measures include the percentage of students entering secondary school who graduate, the percentage of graduates who obtain degrees and diplomas from universities and colleges or who successfully complete apprenticeship programs for the trades, and employer satisfaction surveys for graduates who go directly into the workforce.

Recommendation

To help determine whether the Ministry's expectations for curriculum reform are being met, and to enhance the public accountability of school boards, the Ministry should:

- **implement procedures to monitor and report on consistency in teachers' student assessment practices throughout the province;**
- **assess the benefits of developing common province-wide exams;**
- **establish a process for strengthening school board implementation processes, the scope of which includes evaluating the adequacy of key curriculum delivery, student assessment, improvement planning, and results reporting procedures of school boards; and**
- **develop and report on outcome-oriented measures of effectiveness for elementary and secondary education.**

Ministry Response

Ensuring greater consistency in student assessment and evaluation and enhancing school board accountability are objectives which the Ministry supports.

The Ministry has invested in strategies, resources, and teacher training to improve consistency in the assessment of student achievement. We are

pleased that principals and teachers whom the auditor interviewed believe that consistency in assessment is improving in their individual schools.

The Ministry will work with boards to develop ways to monitor and report on consistency in student assessment. We will research and develop ways to ensure greater consistency in final evaluations of student achievement and research appropriate outcome measures. We will continue to consult with school board leaders on how to enhance accountability measures related to curriculum implementation.

STRENGTHENING IMPROVEMENT PLANNING AND RESEARCH

At present, EQAO test results represent the only comprehensive data available on the performance of students across the province. The table below presents a summary of the results since the tests were introduced.

EQAO Results—Students Who Achieved at Levels 3 and 4 as a % of Enrolment

	1997/98 (%)	1998/99 (%)	1999/2000 (%)	2000/01 (%)	2001/02 (%)	2001/02 Compared to:	
						1 st Year (%)	3 rd Year (%)
Grade 3							
Reading	46	45	49	49	50	4	1
Writing	49	52	52	52	55	6	3
Math	43	56	57	61	58	15	1
Grade 6							
Reading		48	50	55	55	7	0
Writing		48	48	52	53	5	1
Math		46	51	54	54	8	0
Grade 9 Math							
Applied				13	21	8	
Academic				50	64	14	

Source of data: EQAO

In response to EQAO results, schools, boards, and the Ministry have taken steps to improve student performance on EQAO tests. Some steps provided a one-time increase in the level of student performance. For example, we were told by educators we interviewed that designing classroom problems in a format that is substantially the same as that used on EQAO tests, so that students are familiar with the format, improves student performance on the tests. The impact of such initiatives on student performance appears to be diminishing since, as can be seen in the table, there has been little improvement in the proportion of students performing at or above the provincial standard (level 3) after the third year of testing.

Other steps taken that are intended to contribute to a long-term improvement in performance include:

- Boards we visited provided some additional resources to their lowest-performing schools, such as more time from consultants or other assistance, to facilitate the implementation of instructional practices that were better suited to the students concerned. For example, we visited an elementary school that had been among the lowest-performing schools in the province on the EQAO tests. The school changed its approach to language instruction and purchased a program, including textbooks, that supported the new approach, and subsequently experienced a significant improvement, as anticipated, on the EQAO reading and writing tests. In addition, the school achieved much better results on the math test, which the principal and teachers believed resulted from their students being better able to understand the questions due to their improved language skills. In addition to school-based initiatives, EQAO results also provided the impetus for some boards to implement remedial programs, such as summer literacy camps, and tutoring programs whereby high-performing students in senior secondary grades assist students in junior secondary grades who are having problems.
- The Ministry used EQAO results to identify schools that were eligible for assistance under its Support for Schools That Need Extra Help Program. This three-year, \$5 million pilot program was announced in October 2001. Schools where less than one-third of students have achieved at levels 3 and 4 on the EQAO grade 3 test for three consecutive years are eligible for assistance. The Ministry has selected 29 of the 58 eligible schools identified so far and plans to increase the number to 40-45. Under the program, specialist teams composed of former principals and university experts assist selected schools in diagnosing the reasons for their poor performance and in developing strategies for corrective action. The schools base their improvement plans on this information, submit them to the Ministry, and each may receive financial assistance over three years to assist them to implement their plans.

Further gains in student performance will have to be achieved through school and board improvement planning processes that result in the causes of poor student performance being identified and appropriate corrective action being implemented, such as changes in instructional strategies and techniques. At the time of our audit, however, none of the boards we visited had established effective improvement planning processes due to the absence of certain key requirements, such as:

- sufficient, accurate, and comparable student performance and contextual data useful for interpreting achievement results as well as information systems that are capable of supporting the collection and analysis of such data. The Ministry has not established standards regarding the minimum capabilities and content of student information systems. As a result, we found, for example, that the boards we visited did not record data on their student information systems such as participation in remedial programs or the failure to complete homework (identified in one study as “the single biggest

detriment to student achievement”). As noted earlier in this report, neither the Ministry nor the boards have procedures in place to provide assurance that student performance data is comparable;

- appropriate training to ensure that school and board personnel have the knowledge and skills necessary to use the systems and perform the analyses needed to identify and prioritize problems, develop viable plans with challenging but realistic objectives, establish appropriate interim milestones to measure progress in achieving these objectives, and measure and report on the extent to which the plans’ objectives have been achieved; and
- procedures to assess the quality of the improvement planning processes in place at schools and at school boards, and to ensure that corrective action is taken where deficiencies in the processes are identified. At the time of our audit, the boards we visited had not established formal review processes for their schools’ improvement plans, although one board was planning to do so with respect to the plans for the 2003/04 school year.

Every school board is required to submit a board improvement plan to the EQAO that meets specific content requirements established by the agency. The EQAO reviews and provides comments on each board’s improvement plan in relation to its published criteria. However, these reviews do not include such matters as determining whether problem identification is consistent with the EQAO results for the board overall and for its schools, or whether appropriate progress reporting procedures are in place.

Research to Support Decision-making

In addition to its impact on improvement planning processes, the lack of sufficient, comparable student performance data and suitable computer support systems to capture and analyze contextual data also limits the ability of the Ministry and school boards to conduct the research necessary to address critical issues in curriculum delivery and to provide the basis for informed decision-making. While the EQAO has established an Education Quality Indicator Program to collect some contextual data that is intended to help readers interpret student achievement results it publishes, the data is useful primarily in identifying areas of focus for further study and research. However, the Ministry had not, either directly or through the EQAO, routinely sponsored research or co-ordinated educational research carried out by school boards and the province’s universities. Given that several school boards have established their own research and evaluation functions, some co-ordination of their efforts would increase the cost effectiveness of research and benefit all school boards.

There are many significant issues that research could help address. For example:

- Even though the correlation between lower socioeconomic status and poor performance is well documented, it is not inevitable. We found a number of reports of schools in

Ontario and other jurisdictions where students coming primarily from economically disadvantaged families performed well. Research that identified the factors that actually cause this relationship would assist educators in determining the strategies that they should employ to improve the performance of these students.

- Some educators have suggested that larger classes for high-performing students and smaller classes for low-performing students who require greater assistance would increase the number of students who meet provincial expectations.
- While some educators believe that using subject specialists rather than generalists to teach grade 7 and 8 students improves student achievement, the extent to which this is true and whether any observed improvement in student achievement carries through to students' grade 9 report card marks and their marks on the EQAO grade 9 math test and the OSSLT have not been studied.
- The College of Teachers and the Task Force on Effective Schools—as well as research that we reviewed—concluded that teacher quality is the most important factor influencing student achievement. While the Ministry and school boards are at present implementing a new teacher-performance evaluation process, the Ministry has not implemented methods of tracking the impact of teaching quality on student achievement, as is done in some other jurisdictions (for example, the Tennessee Value-Added Assessment System). A recent Canadian study, “Teacher Quality in Canada,” stated that “Canada has not yet utilized multi-year comprehensive student achievement data in order to measure teacher effects on learning or value-added achievement gains. Even where such data are available, we do not yet have a culture within the public education system that fully recognizes its potential value.”

Clearly, there are many issues that school boards and the Ministry need to examine if significant improvements in student performance are to be achieved. A co-ordinated effort will help ensure that research is conducted cost effectively. In this regard, in July 2003, the EQAO initiated an external research program in which proposals for reports and analyses on topics relevant to the work of the EQAO were solicited. The research program may also include critical literature reviews that have implications for policy on assessment and educational improvement.

Recommendation

To help ensure that decisions regarding curriculum delivery are based upon sufficient and reliable information, and to enhance the effectiveness of the improvement planning process, the Ministry should:

- **establish standards regarding the capability of student information systems that school boards use and the information that is recorded on them;**
- **co-ordinate and support training for school and board personnel in implementing effective improvement planning processes;**

- implement, either through the Education Quality and Accountability Office or otherwise, a review function for school board and school improvement planning processes that includes on-site examination; and
- co-ordinate and support research on key curriculum delivery issues.

Ministry Response

Research, data management, and information systems support effective decision-making and improvement-planning processes.

The Ministry has trained board teams on how to use assessment data to inform improvement planning and sponsored three regional symposia on “Data Driven Decision-Making for School Improvement.” Approximately 2,000 school board administrators were trained to use quality data to support improved decision-making.

The Ministry is developing standards to guide boards in their data management. The Ministry and the Education Quality and Accountability Office will also work with the Council of Ontario Directors of Education to determine cost-effective ways to improve school improvement planning processes. We will continue working with the education sector to ensure that decisions regarding curriculum delivery are based upon sufficient and reliable information. In addition, the Ministry will commit to continuing support for research, dependent on the availability of appropriate resources.

EVALUATING THE ANNUAL EDUCATION PLAN/ TEACHER ADVISER PROGRAM

In order to help meet the objective of creating “effective links to work and higher education,” the Ministry included a for-credit career education course in the curriculum and required school boards to offer co-operative education/work experience opportunities, and to provide the Teacher Adviser Program (TAP) and the Annual Education Plan (AEP) for their students.

In September 1999, the Ministry began requiring that principals establish the TAP for students in grades 7 to 11, with the option of providing the program for students in grade 12. In July 2001, the Ministry revised the policy to encourage but not require the assignment of a teacher adviser for students in grades 11 and 12. The AEP was also introduced by the Ministry in 1999 for students in grades 7 to 12 and was designed to help students take responsibility for their education, make informed decisions, and plan for their futures with the help of parents, teacher advisers, and guidance counsellors.

At the elementary level, teachers and principals felt that these initiatives were beneficial because they encouraged students to think about the fact that what they do in school has an impact on their future. Secondary teachers and principals generally agreed with this benefit,

but most felt that the AEP and TAP programs were not effective as implemented for the following reasons:

- Classroom teachers did not feel that they had the knowledge required to provide students with advice regarding their career choices—this is the role of guidance teachers. They also stated that, given the timetabling realities of the typical secondary school, it is impossible to obtain the continuity that is required for teachers to know enough about their students to function effectively as advisers.
- Principals and teachers stated that students have no immediate incentive to take the process seriously. They told us that students are motivated by marks. Since there are no marks associated with the AEP and TAP programs, students will not put much effort into them.

The majority of educators at the secondary level were of the opinion that it would be better to reallocate the resources attached to these initiatives to other areas—for example, more guidance teachers—as opposed to trying to fix the two programs.

In addition to the concerns raised by educators, we noted that:

- The Ministry has not established measurable objectives for the program, or developed any procedures to monitor its effectiveness.
- At the secondary schools that we visited:
 - AEPs were not critically assessed by teacher advisers. Thus, students are allowed to state that they plan to do better in math without an adequate explanation as to how this is to be accomplished other than the generic “work harder” or “study more.”
 - In the AEPs that we reviewed, students were not asked to note in their AEPs any of the post-graduation destinations that they were considering. Thus there was no link between the AEP and career objectives and no basis for advising, for example, a “C” student in math that some of his or her career destinations typically require a B+.
 - There is no formal process to monitor progress on achieving the objectives noted in the AEP. For example, if improving his or her mark in math was a student’s objective, we would expect to see milestones established, such as a trend of improving marks on assignments and midterm tests and, if the milestones were not met, evidence of a discussion of the corrective action (that is, remedial work of some sort) that was taken.

Recommendation

In order to help ensure that appropriate benefits are realized from the Annual Education Plan/Teacher Adviser Program, the Ministry should, in conjunction with school boards and principals, formally assess the success of the program in meeting the needs of the students. If the assessment is positive, measurable objectives for the program should be established.

Ministry Response

The Annual Education Plan and Teacher Adviser Program is considered an important tool to help students achieve their educational goals.

Ministry policy already requires school principals to conduct a survey every three years with students, parents, teachers, and community members to determine the effectiveness of the school's guidance and career education program, including the Annual Education Plan and Teacher Adviser Program.

The Ministry will undertake a review of the implementation of the Annual Education Plan and Teacher Adviser Program in Ontario schools. This review will involve key education stakeholders, including principals.