

Using Data to Promote Student Success

A Brief Guide to Assist School Administrators in Interpreting Their Data



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“Learning from data is central to our overarching responsibility as educators—being accountable for the success of each and every student.”

*Marguerite Jackson, CEO,
Education Quality and Accountability Office*

Introduction

Every student deserves a good outcome from his or her public education. Understanding and acting upon circumstances surrounding students allows a school learning community to provide focused attention to ensure students thrive in their schooling.

Examining the data summarizing student performance on the EQAO assessments is *one step* in a process* that administrators and teachers engage in to reflect on their professional practice and to identify strategies to improve student achievement and close the gap between low- and high-achieving students.

Interpretation or analysis of data may seem like an overwhelming task, but in reality analyzing data is like being a detective—it requires searching for meaning, patterns, relationships. The numbers are the clues, the starting point in the search. The numbers are indicators of what is happening, but they don’t represent the whole story. You need to look beyond the numbers to gain a full understanding of what they represent. This analysis or interpretation phase is really a questioning phase, on the road to understanding.

* Examining data to develop understanding and to begin to establish a focus for school improvement is one step in the full school improvement planning process. Please refer to the following documents on the EQAO Web site as resources that provide detailed descriptions of the steps to be followed in the school improvement planning process:

- *EQAO Guide to School and Board Improvement Planning*
- *Educator Handbook*

The purpose of this guide is to suggest some questions that school administrators and teachers might find helpful in the examination of their data. In most cases, you will not be able to answer all of the questions just by looking at the results. You will need to examine other information available in your school; talk to other people in your board, such as curriculum staff, administrators and teachers in other schools; and read current literature about best practices in other jurisdictions.

Getting Started

This guide is divided into the following areas of focus:

- I. Guiding Principles
- II. Questions to Consider in Examining Data
 - A. participation and demographic information
 - B. achievement data

I Guiding Principles

The following are principles to keep in mind as you begin to examine your data.

1. Each school is unique, and to appreciate the distinctive character of a school or a board, it is necessary to understand the features and characteristics of the community it serves.
2. In examining results over time, if it is difficult to identify trends in a three-year period, consider a longer time span.
3. Although educators will consider percentage changes in answering questions about their data, it is important to exercise caution when interpreting percentage fluctuations where the numbers of students are small. For example, in a class of 20 students, an increase or decrease of 10% means a change of two students.
4. These assessments capture performance at a specific point in time each year. Results should be considered together with other school information about student performance in reading, writing and mathematics.

II Questions to Consider in Examining Data

One tip for getting started: consider the “4C’s of Interpreting Data.”*

Are the data you have

- ✓ complete?
- ✓ consistent?
- ✓ comparative?
- ✓ concealing?

The “4C’s” will be used as a framework for proposing questions that you might consider in your analysis.

A. Contextual Data

There are three sources of information that can be examined initially to set the context for your examination of achievement data. They are

- the summary of participation of your students in the EQAO assessments, including an indication of students who were exempted and those who received accommodations;
- the overview of demographic information available (e.g. gender, ESL/ELD and special needs status, place of birth, language background) and
- the summary of responses to the Student Questionnaire, which provides information about student attitudes.

Each of these sections includes data for your school (as well as data for your board and for the province[†]) as provided by the school through the **Student Information Form** or reported by students on the **Student Questionnaire**.

* The concept of the “4C’s of Interpreting Data” was first developed by the research and evaluation staff of the former North York Board of Education and was incorporated into workshops on data analysis and interpretation provided for administrators by the Assessment Training Consortium (a partnership among six Ontario district school boards).

† Please note that for the first release of data on the secure portion of the EQAO Web site, data are provided only for schools and boards. Provincial data will be added on the second release.

Consider these two key questions as you begin your examination of these data:

- Are the data complete?
- How does the context within which you work compare with that of the board and the province?

Are the data complete?

Do you have available additional demographic data that would complement what is gathered by EQAO and that would provide a more comprehensive picture of your school community? For example, do you have data about the socio-economic status of your community or mobility rates of your student population?

Consideration of Context: How do the demographic and contextual data for your school this year compare with those of previous years? How does your school community compare to that of your board or the province?

How do the current demographic and participation data for your school compare to those of previous years? If there are significant changes in exemption rates, accommodations provided, or the makeup of your student population in terms of ESL/ELD learners or students with special needs, you may need to take these differences into account when you consider trends in your achievement data over time. You may also need to consider whether any changes point to a need to review or re-evaluate decisions, policies or procedures in your school.

How does your school's exemption rate compare to that of your board or the province? If your rate of exemption is much higher than either your board or the province, what are the possible explanations? Are there circumstances relating to your student population that can account for these differences?

Similarly, how does the rate of accommodation in your school compare with that of your board and/or the province?

If you have a number of students who did not provide sufficient work to be scored (i.e., received NEIS), what reasons might account for this? For example, were students absent for significant portions of the assessment? Do these students not have the knowledge or skill to be able to complete the assessment?

Does your school have a significant number of students who are ESL/ELD learners or students with special needs? If the profile for your school differs from that for your board or the province, you may need to keep this in mind as you examine your achievement data and identify strategies for improvement. Some strategies may be more effective with some groups of students than with others.

What did students report about their attitudes toward reading, writing and mathematics? How does the pattern of results for your students compare with those of your board and the province?

Given your review of your contextual data, what are the two or three key points that you want to keep in mind as you examine your achievement data?

B. Achievement Data

The Detailed Student Results report provides achievement data for all students in each of Grades 3 and 6, in reading, writing and mathematics, for participating students and for particular groups of students (i.e., males and females, ESL/ELD learners, students with special needs [excluding gifted] and French Immersion students). A new report provided for schools this year,* the Question Analysis Report, may also be useful in enabling you to examine your students' performance in more detail, as it provides information for a sample of individual items on the assessment.

* This report will be available at the time of the second release.

Have you captured the complete picture?

Schools are rich repositories of information about their students and their achievements. Results from the EQAO assessments, while providing data for all students across the province with respect to a common yardstick, represent a snapshot of student performance at one point in time. To develop a full understanding of your students and their achievements, it is important to include in your examination information gathered by teachers through ongoing classroom observation and assessments throughout the year.

This information could include both formal and informal data, such as

- report card marks,
- student attendance,
- behaviour incident reports,
- rates of homework completion and
- number of books read.

In addition, you may have data from board- and/or school-administered standardized achievement tests or surveys.

Are results from various sources consistent?

One of the first questions you will want to address is: Are the results from the EQAO assessments consistent with what you know about your students through teachers' ongoing classroom assessments?

In other words,

- do the students who perform well on a daily basis also perform well on the EQAO assessments?
- do the students who perform poorly on the EQAO assessments demonstrate difficulty in acquiring skills and knowledge in the classroom?
- are the overall results for your students consistent with your expectations? Is the percentage of students at or above the provincial standard (i.e., Level 3 or above) in each of reading, writing and mathematics what you expected?

If you find there are inconsistencies, you will want to ask why. This may be a more difficult question to answer. In attempting to understand why there are inconsistencies, you might consider

- whether anything happened during the EQAO assessments that may have had an impact on the results;
- whether teachers have a complete understanding of the curriculum expectations and what student work at each achievement level looks like;
- whether teachers' judgments about the adequacy of student work are consistent with expectations.

How do results for my school compare to the standard? my targets? my board? the province? similar schools?

Information is often more meaningful when a point of comparison is available. Comparisons help to enhance our understanding. When making comparisons, however, you need to keep in mind that you are searching for meaning, not making judgments.

You might consider the following comparisons:

- *comparison with the provincial standard:* The long-term provincial goal is for 75% of students to achieve the provincial standard. What percentage of students in your school are achieving at Level 3 or higher?
- *comparison with your school's target for improvement:* Did your school meet its target for improvement? If not, do you understand why? Did this target reflect a challenging enough goal for the students at your school?
- *comparison of results over time:* When you consider your school's results for the past three years, are there any positive or negative trends? Remember to keep in mind when considering variations in performance from one year to the next whether the number of students is small, student mobility is high and/or student demographics have changed.
- *comparison of results with your board and the province:* Is the pattern of results in your school similar to or different from those of your board and the province?

If the results are different, can these differences be explained by your school's program delivery, teacher qualifications, available resources and/or professional development opportunities? If the differences in results favour your school, perhaps other schools could learn from your success.

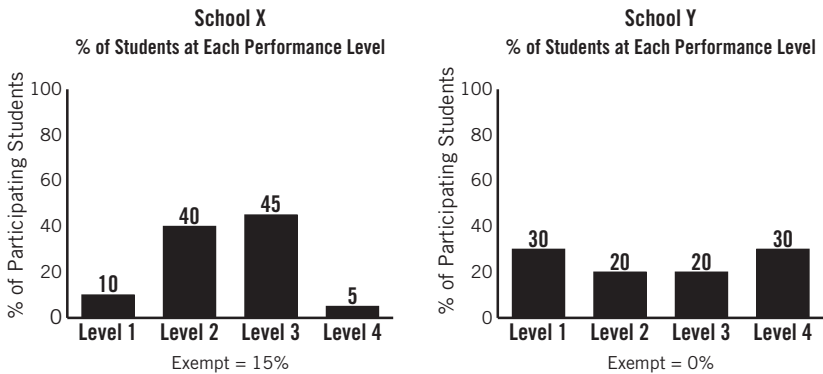
Consider how the demographic profile of your school may be different from that of the board or the province. Identify any special characteristics of the students or the community your school is serving and consider how well the range of student needs is being addressed.

- *comparison with schools similar to yours:* In some instances, comparing your school's results with those of other schools will help you to gain a better understanding of your results, **but** it's important to compare your school to other schools that are similar in terms of demographics plus other contextual variables. You need to compare oranges with oranges! If other schools similar to yours are achieving better results, you want to know why. What are they doing that's had a positive impact? Is it something that your school should consider? If your school is achieving better results and you are clear about what is making the difference, you will want to look for opportunities to share the ingredients of your school's success.

Is anything concealed?

(i) Have you considered the full distribution of results?

- Often we look only at the averages or percentages of students above a certain level, such as the provincial standard. But if you want the whole story, you need to look at the full distribution of results as well. Consider the following graphs.



These schools had the same percentage of students at or above Level 3, but the underlying story is quite different. For example,

- the percentage of students at Levels 1 and 4 in these schools is quite different;
- the percentage of students exempted in each school is quite different and may be part of the explanation of the differences between the schools in terms of the percentage of students achieving at Level 1.

If actions were planned based only on the percentage of students achieving at Level 3 or above, you could be going in the wrong direction!

- (ii) Digging deeper: Have you examined the performance of particular groups of students?
- Often, further understanding of results arises from “disaggregation” of the data, that is, through examining the performance of various groups of students. This examination might consider factors such as gender, ESL/ELD and special needs status, length of time in Canada, attendance and student attitudes. Some possible questions are the following:
 - Are there differences in the performance of females and males? In what areas are there gaps? What programming might help to bridge the gap?
 - Are there differences in the performance of ESL/ELD learners in terms of the length of time they have been in Canada? (Be cautious about reaching conclusions when the number of students involved is small.)
 - Who are the low-achieving students? What are their characteristics? What supports and/or programs are in place to address their needs?
 - Who are the high-achieving students? What are their characteristics? What is contributing to their success?
 - Do students who are absent more than the average attain different achievement levels from students who attend school consistently?
 - What are the achievement levels for students with positive and with negative attitudes? Are there differences?

A Final Note

As will be clearly evident by now, examining your data is a process of asking questions in a search for meaning and understanding. Remember, this examination is one step in the process of school improvement planning.

In their book *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*, Rick Dufour and Robert Eaker observe that because of the factory model that had a pervasive influence on the twentieth century, there is a tendency to think of improvement in terms of production: develop a design, identify the sequential steps and follow the blueprint until the product is finished and subjected to stringent quality assurance.* They have suggested what they think is a more suitable metaphor.

The processes involved in school improvement are analogous to farming. We must plant the seeds of school improvement, cultivate, nurture and care for them. We must practice patience and celebrate the unfolding of each blossom. We must believe the quality of the lives of our families, friends and neighbors depends on the success of each harvest ... because it does! We must realize one profitable crop will not be grounds for retirement. We must continually plan, monitor and model the best behaviors and practices known. This will only happen if the process is cyclical, if it becomes internalized and if improvement is how we do business every day.

We hope this guide has been helpful in getting you started on the examination of your data.

* Dufour, Richard, and Robert Eaker. 1998. *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*. National Educational Service, Bloomington, Indiana.

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