



Linking Socioeconomic Factors to Schools’ Grade 3/6 EQAO Achievement

Samuel M. Zheng

Research & Evaluation Services
York Region District School Board

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Introduction

- The past several years have seen improvements in performance in the EQAO assessments at the Board and the provincial level.
- However, there is still a considerable gap between the lowest and highest achieving schools.
- There are also relatively few schools that have shown a pattern of consistent improvement over the past five years, and many more schools with results that have either flat lined or varied widely from one year to the next.

Introduction (continued)

- It is well recognized in the literature that socioeconomic status and demographic backgrounds of the school community are related to the school's performance.
- Recent research suggests that good schools are not necessarily those whose students score well on province-wide tests but those that consistently out-perform other schools in neighbourhoods with similar socioeconomic characteristics.
- Schools differ widely in their demographic contexts; some may show achievement gains despite challenging circumstances, whereas others may achieve only modest results in an affluent community context.

Socioeconomic Factors

- This study used Census data and enrollment data from YRDSB student information system to define socioeconomic factors for school communities:

From Census

- % of adults who have less than grade 9 education
- % of adults who have university degree or above
- Median family income
- % of families who live in rented dwellings
- % of immigrants who came to Canada during five-year period
- % of lone-parent families
- % of adults who don't speak either English or French at home

From YRDSB Student Information System

- % of students who moved during the school years

Grouping Schools in SES Clusters

- Students' postal codes were linked to the Census' dissemination area (DA) and a factor analysis was conducted to statistically combine school-level variables in order to assign a single socioeconomic value to each school community.
- A cluster analysis was then conducted to statistically group schools into five clusters based on their socioeconomic status:
 - Low
 - Medium Low
 - Medium
 - Medium High
 - High

Calculating School's EQAO Literacy/Numeracy Scores

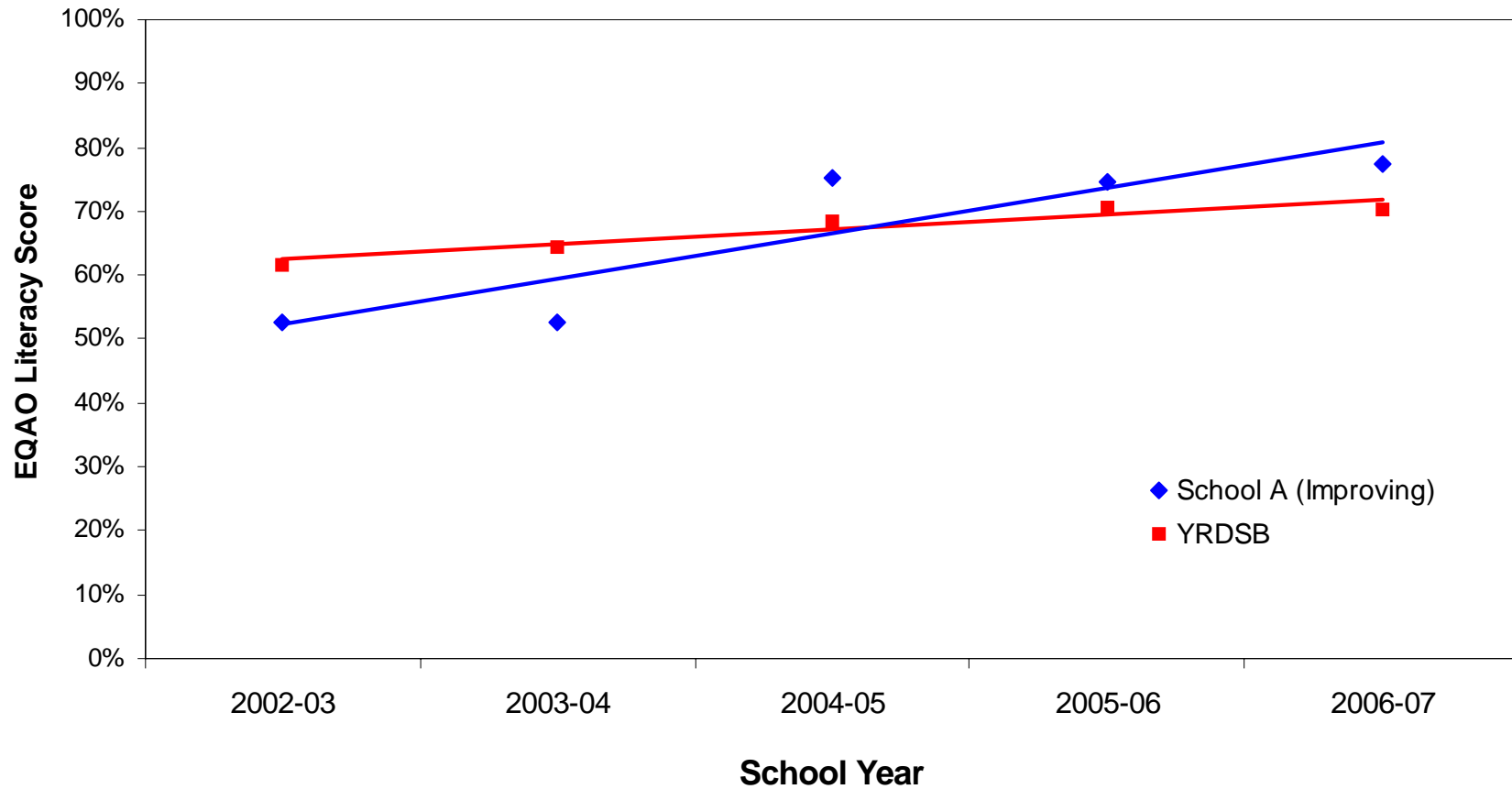
- It would be different to measure a school's overall performance in the EQAO assessments if using all six EQAO subjects (Grade 3/6 reading, writing and mathematics) individually.
- Each school's Grade 3 and 6 EQAO **reading** and **writing** results were combined into one EQAO literacy score using the following two options:
 - **Option 1:** weighted reading and writing results from the primary and junior assessments;
 - **Option 2:** statistical combination of each school's Gr. 3 and 6 EQAO reading and writing results based on their correlations;
 - The EQAO literacy scores from the above two calculations are almost identical. Option 1 was adapted in the study.
- School's numeracy scores were calculated from the Grade 3 and 6 EQAO mathematics results, using the same method.

Trend of Literacy Achievement Over Time

- A linear regression model was employed to determine the trend for each school over five years (from 2002-2003 to 2006-2007 school year), using the calculated literacy score as a time-series variable.
- The school trend was classified into one of the three categories based on the board trend:
 - **Improving** – school trend is significantly above the Board trend
 - **Static** – school trends is similar to the board trend, and
 - **Declining** – school trend is significantly below the Board trend
- As the provincial and Board results increased consistently over time, using the board trend as a reference to classify individual school trend will identify schools that are improving significantly, and schools who are declining significantly relative to the board average.

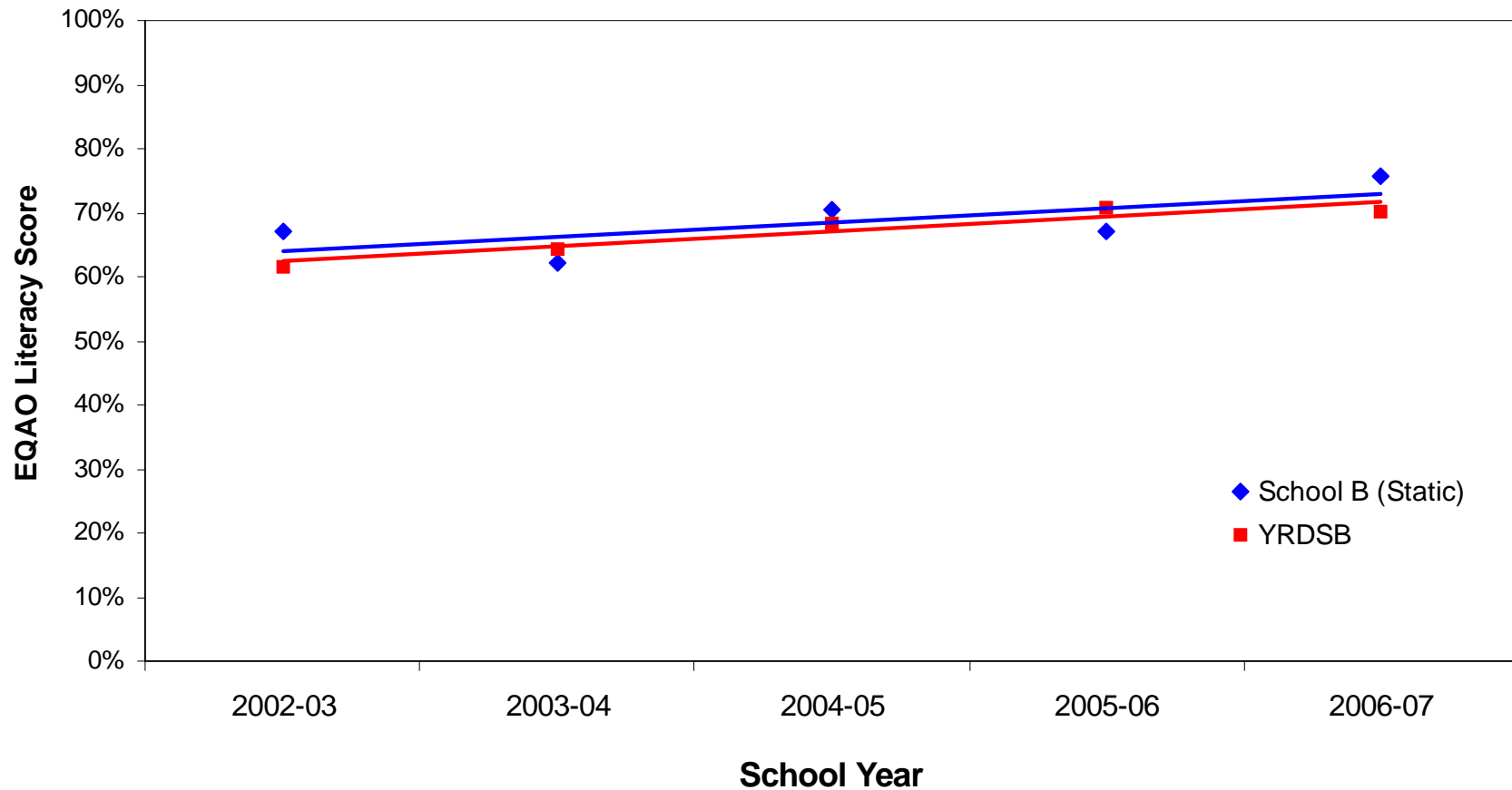
Trend Over Time: Improving

Figure 2. Comparing School Trend in Relation to the Board in the 2002/03 - 2006/07 EQAO Literact Assessments: Improving



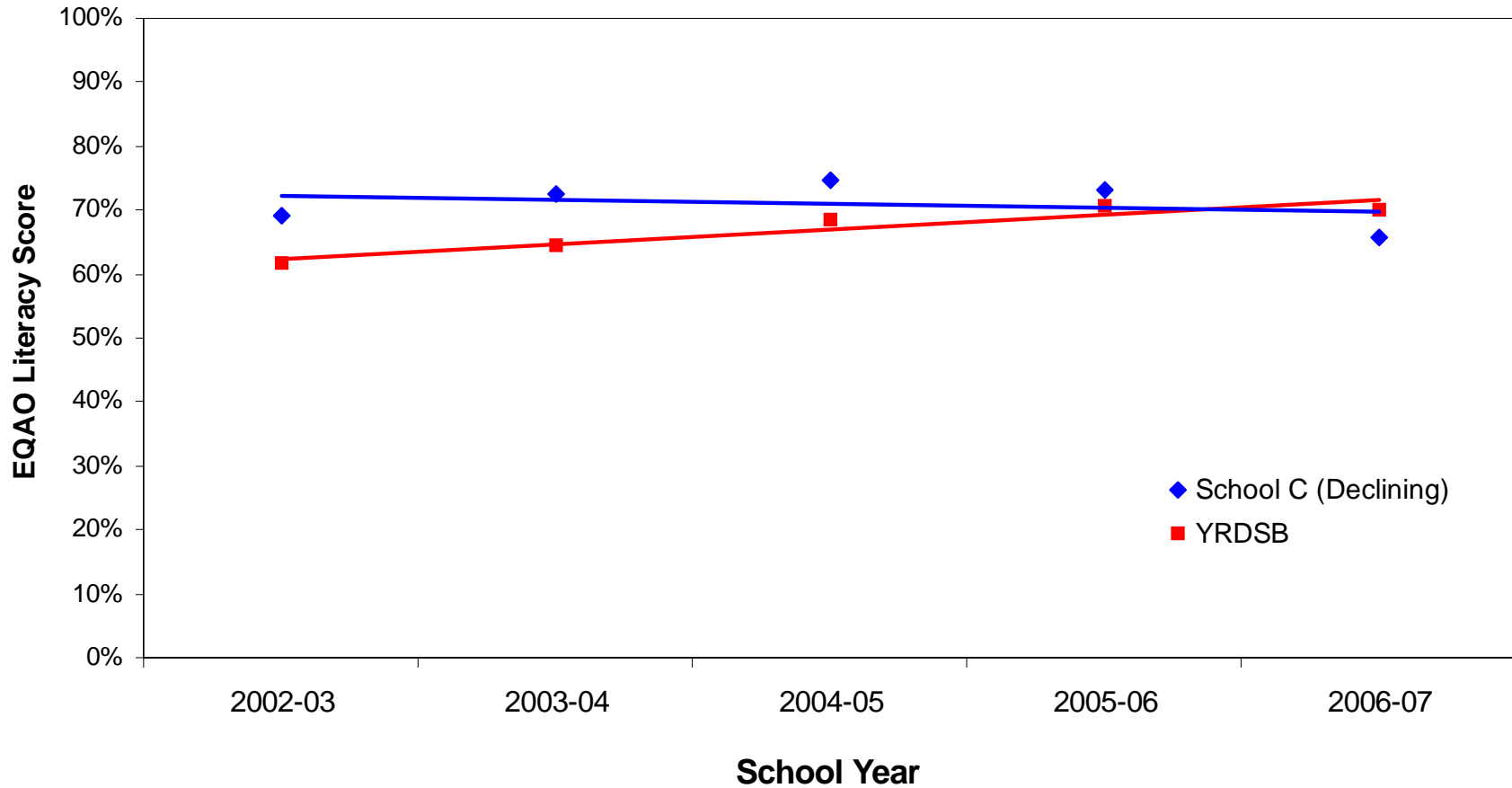
Trend Over Time: Static

Figure 3. Comparing School Trend in Relation to the Board in the 2002/03 - 2006/07 EQAO Literacy Assessments: Static



Trend Over Time: Declining

Figure 4. Comparing School Trend in Relation to the Board in the 2002/03 - 2006/07 EQAO Literacy Assessments: Declining



Comparing Schools with Ontario and YRDSB

- Another way to determine schools' EQAO literacy performance is to compare their results with the Board and the Province.
- Schools were classified into the following three categories:
 - Above YRDSB
 - Between Ontario and YRDSB
 - Below Ontario

Comparing Schools Within the SES Cluster

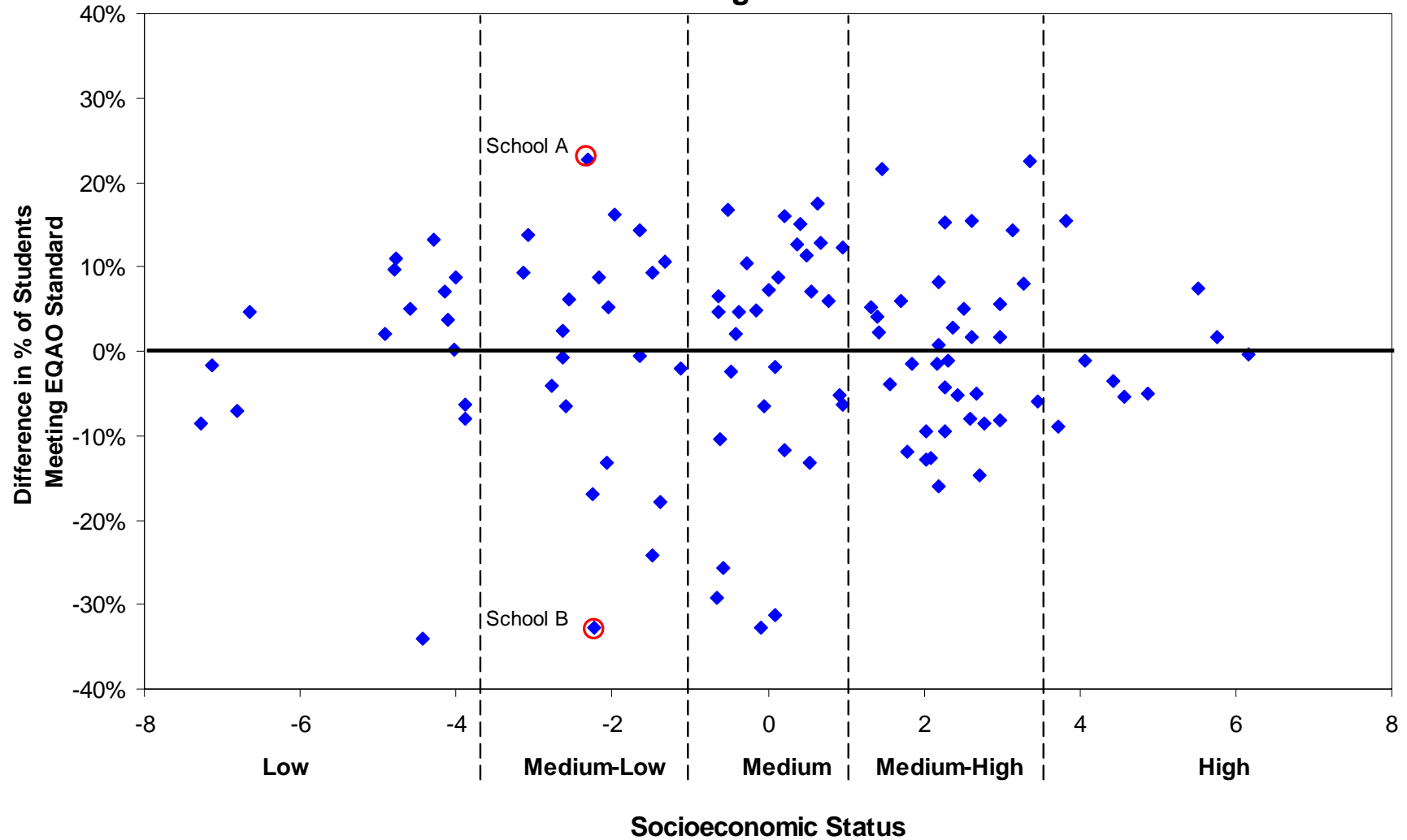
- Comparing school results with the Board and the Province provides an absolute measurement, but it does not always make practical sense for school improvement.
- A better way is to compare schools with similar socioeconomic backgrounds, i.e., within the same SES cluster.
- The average literacy scores were calculated for each SES cluster by averaging schools' literacy scores.

Comparing Schools Within SES Cluster

- Therefore it is reasonable to compare schools' literacy and numeracy scores with schools of similar socioeconomic backgrounds, i.e. within the same SES cluster:
 - If the difference between school's score and the cluster average is positive, the school out-performs the average of schools with similar socioeconomic backgrounds;
 - If the difference is zero, the school is an “average” school in terms of performance in EQAO assessments;
 - If the difference is negative, the school is below the average of similar schools.

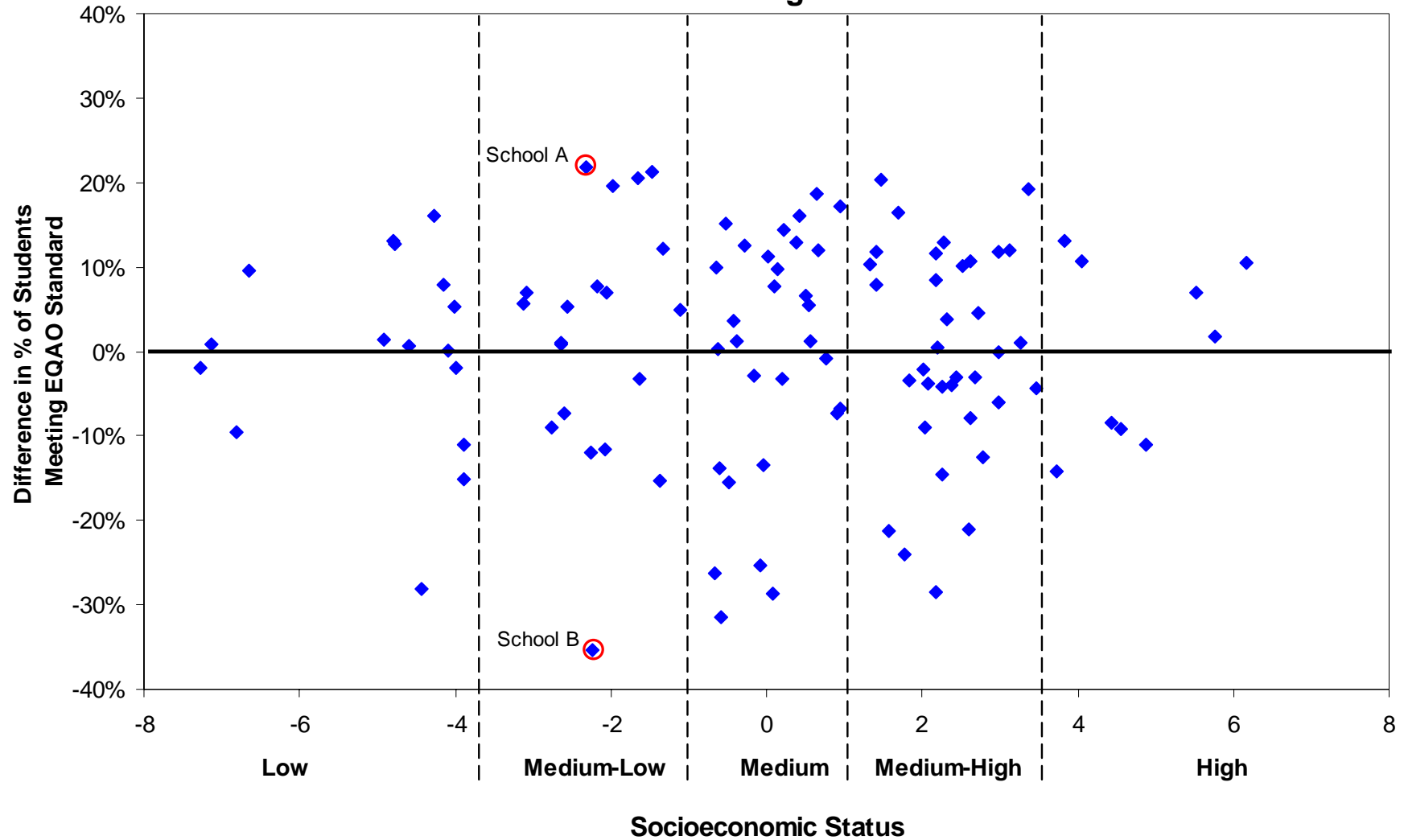
Comparing Schools Within SES Cluster: 2006/07

Figure 11. Differences of Schools' 2006/07 Literacy Scores and the Cluster Averages



Comparing Schools Within SES Cluster: 2006/07

Figure 12. Differences of Schools' 2006/07 Numeracy Scores and the Cluster Averages



Summary

- Schools can be grouped into five socioeconomic clusters based on the characters of school communities.
- School's literacy performance on the provincial Grade 3/6 EQAO assessments should be viewed in multiple ways:
 - Trend over time
 - Comparison with the Board and Ontario
 - Comparison with schools with similar socioeconomic backgrounds, i.e. within same SES clusters

Summary (continued)

- School's literacy performance can be compared with the average of the Board or the Province. However, the better way to evaluate school's performance would be to compare schools with similar schools.
- Such a comparison would be practical and useful for schools that perform below the cluster average to examine schools with similar socioeconomic background but with stronger performance in the EQAO assessments.

Summary (continued)

- The following options can be used for identifying needy schools for resource allocation purpose:
 - Schools performing at least 10% below their cluster averages; or
 - Schools who are declining over time.