

***State of New York  
Office of the State Comptroller  
Division of Management Audit  
and State Financial Services***

**NEW YORK CITY BOARD OF  
EDUCATION**

**ACCURACY OF SELECTED SCHOOL  
DATA**

**REPORT 98-N-2**



***H. Carl McCall***  
*Comptroller*



# State of New York Office of the State Comptroller

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## **Division of Management Audit and State Financial Services**

### **Report 98-N-2**

Mr. Rudolph F. Crew, Ed.D  
Chancellor  
New York City Board of Education  
110 Livingston Street  
Brooklyn, NY 11201

Dear Mr. Crew:

The following is our audit report on the accuracy of selected school data compiled by the New York City Board of Education.

We conducted our audit pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article III, Section 33 of the General Municipal Law. Major contributors to this report are listed in Appendix A.

*Office of the State Comptroller  
Division of Management Audit  
and State Financial Services*

December 23, 1999

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# Executive Summary

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## New York City Board of Education Accuracy of Selected School Data

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### Scope of Audit

The State Education Department (Department) obtains extensive data from the approximately 700 school districts throughout the State. The Department publishes much of this data in reports that are available to State policymakers, taxpayers, and parents. For example, the Department publishes an annual School Report Card for each school in the State with information about its academic performance and curricula, as well as comparable information for similar schools. The Department also annually reports on a range of educational and financial indicators in its *Report to the Governor and the Legislature on the Educational Status of the State's Schools*. The Department, State policymakers, and taxpayers consider this data when comparing and assessing school performance and in some cases, when allocating State aid, which amounts to more than \$10 billion annually. The Department requires the submission of complete and accurate attendance, enrollment, test score and free and reduced-price meal data because of the importance of this information for Department reporting and monitoring purposes.

The Board assigns about 60 staff to review attendance and enrollment data compilation and reporting procedures at about 250 schools annually. These staff report observations which outline needed improvements.

Our audit addressed the following questions about the above categories of data submitted to the Department by 13 selected schools through the New York City Board of Education (Board) for the period of July 1, 1996 through September 30, 1998:

- Did the Department receive accurate data about the 13 schools?
- Is there a risk that internal controls at the Board and at the schools do not provide adequate assurance that reported data is accurate and reliable?

This audit of data controls at Board schools is similar to our audit of data controls at schools outside of New York City (Report 97-S-62, issued November 4, 1998).

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## **Audit Observations and Conclusions**

The Department expects that data should be error free. We found that the Board had a data oversight function in place, but still provided some inaccurate data about the 13 schools we selected to the Department. Our examination showed that some schools had attendance data errors, discrepancies or omissions. Some schools also had inaccuracies in free and reduced-price meal program participation data. We also found internal control weaknesses that increase the risk that student test results might be incorrectly reported. Our audit did not identify enrollment data inaccuracies. While the presence of the Board's attendance and enrollment data oversight function tends to strengthen its control environment and procedures for assuring data accuracy, overall attendance controls were not effective in several of the schools that we visited. Since we visited only 13 of the over 1,100 City schools, we cannot project a citywide incidence of errors or its impact on State aid or information reporting. However, our audit findings do raise questions about the validity of information compiled from such school data. Internal controls need to be strengthened to yield reliable, accurate data to Department, Board officials and policymakers. By strengthening controls, the Board can further reduce the risk that data may be materially inaccurate and unreliable.

Attendance days impact State aid and the measurement of student and school performance. We found unexplainable differences between the scan sheet — the form used to take the daily attendance — and the computer data bases used to compile attendance reporting for the Department at some of the schools we visited. School offices attributed the differences to legitimate adjustments. However, these explanations were not documented. We also found at one high school that scan sheets for certain students in our sample could not be located. This can be indicative of a problem because the attendance system default indicates a student is present unless a scan sheet specifically records the student as absent. Thus, without being able to locate and review scan sheets, it cannot be readily verified whether a recorded attendance for a student is valid. Therefore, if scan sheets were not entered the system would automatically count all students as present. We recommend that the Board consider this risk as it does its own survey of other schools we did not visit. In addition, for the schools we visited, they should review the differences we found and determine what, if any, corrective steps may be necessary. (See pp. 5-11)

To foster the integrity of machine-processed, standardized student examinations, the Board established an erasure analysis technique to detect the potential improper alteration of exams on a post-review basis. Such a risk-based analysis can help target investigations and actions to follow up on problems, and the Board has indicated that it has investigated resulting problems. Our review of the erasure analysis shows that while there was only a small percentage of potentially problematic altered answer sheets relative to the number of scanned answer sheets citywide, the analysis isolated the potentially problematic altered answer sheets to a number of specific classes where these answer sheets appear to comprise about 30 percent of the total answer sheets for the classes. This erasure

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analysis technique, combined with proper follow-up practices, appears to be a best practice for identifying risks that the Board should share with the Department so that it can share the technique, as appropriate, with other school districts in the State. The erasure analysis is done on a post-exam completion basis and therefore may not address all of the risks that may impact improper alteration of exams. To further strengthen control over the integrity of these exams, we recommend that the Board require that completed answer sheets be provided for further processing to someone other than the teachers of the students taking the examinations. (See pp. 11-13)

The Federally-assisted National School Breakfast and Lunch program is available to qualifying students. The Department uses participation in this program as a means of estimating educational needs among students as well as an indicator of poverty level. Our findings were that data errors were not detected when applications for the program were reviewed. We recommend that the Board reinforce requirements for error-free applications. (See pp. 13-15)

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## **Comments of Board Officials**

Board officials generally agree with five of our eight recommendations. Board officials disagree with our recommendation concerning the need to plan to eliminate the working class list (WCL), a manual role book of student attendance which many teachers maintain and which is in addition to the Board's official attendance records and systems. Officials also disagree with our recommendation for separation of duties over students' machine-processed, standardized examinations. In addition, Board officials do not agree to provide additional instruction to school administrators for submitting error-free applications for the free and reduced-price meal program. Finally, Board officials object to our use of the word "error" particularly in describing what we found when comparing scan sheets with the official attendance records reported to the Department.

Auditors' Comments: By not implementing each of the internal controls that we are recommending, the Board forgoes an important opportunity to improve practices and internal controls. This also continues an unnecessary risk that data being furnished to the Department is not accurate or reliable for the important purposes that it is used for. Furthermore, findings of fraud and irregularities with respect to student attendance and student test scores have been disclosed recently by the Moreland Act Commission and the Special Commissioner of Investigation for the New York City School District, respectively. These recent developments emphasize the need for better internal controls, such as we are recommending, to prevent and to detect data errors, omissions or inconsistencies.

As our audit points out, the WCL creates a potential for errors to be introduced into the attendance recording process. During our audit field work, we illustrated to Board officials that, at selected elementary and

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intermediate schools that we visited, we were unable to reconcile WCLs with official attendance records for about half of 210 sampled students. While there can be valid reasons for the two records to not reconcile, it is also possible that the variation is indicative of incorrect practices or improper attendance taking. At a prior meeting with Board officials, we were advised that plans were under development to eliminate the WCL. We are concerned that the Board's response to this report now indicates uncertainty about the future status of the WCL.

We cannot understand why the Board fails to see the merit of our recommendation for having someone other than the students' teachers, who have a vested interest in the test results, handle machine-processed, standardized examinations once these are completed. For example, by giving the examinations back to these teachers, there is a clear risk that blank answers can be filed in with correct responses. In as much as the Board's own erasure analysis confirms that cheating on these exams is a risk, the added internal control appears warranted and would complement the erasure analysis. Also, the erasure analysis is geared toward detecting severe cases of cheating.

In disagreeing with our recommendation for additional instruction to school administrators for carefully reviewing free and reduced-price meal applications, Board officials state that they will consider any specific recommendations we may have. We maintain that the Board should focus on actual results, and Board officials should determine the specific steps that Board staff need to take to achieve expectations of accurate reporting. We also suggest that if errors continue the Board should consider follow up with investigations and disciplinary measures as appropriate.

Although Board officials disagree with our use of the word "errors" to describe our attendance findings, we believe that it is appropriate to use the words errors, discrepancies or omissions to characterize our findings with attendance data. While proper practices would suggest that the attendance data on the system should be fully supported by the input records and other supporting information, such was not the case in several instances, particularly at certain of the high schools we visited. The Board's response to the audit indicates that our report explains that most of the attendance discrepancies are the result of valid corrections. Our report indicates that this explanation is the one provided by schools officials, but these officials did not provide documentation in support of that explanation. There clearly could be other explanations as well.

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<b>Appendix A</b>	Major Contributors to this Report
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<b>Appendix B</b>	Comments of Board of Education Officials
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# Introduction

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## Background

The State Education Department (Department) obtains extensive data from the approximately 700 school districts throughout New York State (State). The Department compiles this data and uses it to measure school performance, calculate State aid payments, and monitor school spending. The following identifies some of the more important data reported to the Department.

- Student attendance data is used to calculate State aid and to measure school and student performance,
- Student enrollment statistics are used to verify student attendance and to calculate per pupil costs,
- Data pertaining to students receiving free and reduced-price meals are used to calculate certain categories of State aid and to measure the educational needs of students, and
- Student test scores are used to measure student and school performance.

The Department publishes much of this school data in reports that are available to State policymakers, taxpayers, and parents. For example, each year, the Department publishes a School Report Card for each school in the State. The School Report Card presents data on academic performance for representative curriculum areas. The School Report Card also includes comparable information for schools in the same district, all public schools in the State, and for similar schools throughout the State. The Department also annually publishes the *Report to the Governor and the Legislature on the Educational Status of the State's Schools* (also known as the Chapter 655 Report). This report presents data on enrollment and student achievement, as well as various types of information about teachers, administrators, and financial matters. The annual *School District Fiscal Profile Report* also presents five-year data trends for revenue and expenditures, school district characteristics, student characteristics, and educational performance.

If the Department is to oversee school operations effectively, schools must submit accurate and reliable data to be included in these reports. The Department, State policymakers, and taxpayers all rely on this data when they assess school performance. Much of the information is also

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considered by State Legislators when they decide how they will allocate State aid, which amounts to about \$10 billion a year.

The New York City Board of Education (Board) oversees the largest school system in the nation. The Board is responsible for a total of approximately 1.1 million students, including about 550,000 attending kindergarten through grade 5 at elementary schools (known individually by the designation PS and a number) and about 200,000 attending grades 6 through 8 at intermediate schools (known individually by the designation IS and a number). Both elementary and intermediate schools are operated by 32 Community School Districts (CSD). Another approximately 300,000 students attend grades 9 through 12 at high schools operated by five Divisions of High Schools (DHS).

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## **Audit Scope, Objectives, and Methodology**

We audited the accuracy of student attendance, enrollment, test scores and free and reduced-price meal data for the period of July 1, 1996 through September 30, 1998. We also audited the procedures and practices used by the Board and the schools to control the generation and the submission of this data for the same period. The primary objectives of our performance audit were to determine whether the schools we visited had provided the Board with accurate and reliable data in these categories, and to determine whether overall Board and school controls were adequate to reduce the risk of incorrect data reporting. To accomplish our objectives, we reviewed and analyzed relevant Department and Board records and interviewed appropriate managers and staff. We also reviewed records and interviewed managers and staff at 13 selected schools. We selected the schools on a judgmental basis to include high schools, intermediate schools and elementary schools in all five boroughs. The schools we visited included: Benjamin Cordozo High School (Queens), John F. Kennedy High School (Bronx), Franklin D. Roosevelt High School (Brooklyn), Seward Park High School (Manhattan), Tottenville High School (Staten Island) PS 86 (Bronx), PS 105 (Brooklyn), PS 173 (Manhattan), IS 62 (Brooklyn), IS 172 (Queens), IS 45 (Bronx), PS 221 (Queens), and IS 90 (Manhattan). We did not use audit results to draw conclusions about possible overall error rates in Board schools. Our audit was delayed because it was not until after our initial field work was concluded that we were informed of the student attendance and enrollment oversight function provided by the Board's Office of Community School District Affairs, Monitoring and Municipal Relations. Consequently, additional effort was needed to understand how the role of this office affected the internal control environment and procedures. Had we known of the role of this office during our initial audit, we may have been able to design our approach differently.

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We conducted our audit in accordance with generally accepted government auditing standards. Such standards require that we plan and perform our audit to adequately assess those operations of the Board which are included within the audit scope. Further, these standards require that we understand the internal control structure implemented by the Board, as well as its compliance with those laws, rules and regulations that are relevant to those operations which are included in our audit scope. An audit includes examining, on a test basis, evidence supporting transactions recorded in the accounting and operating records and applying such other auditing procedures as we consider necessary in the circumstances. An audit also includes assessing the estimates, judgments, and decisions made by management. We believe our audit provides a reasonable basis for our findings, conclusions, and recommendations.

We use a risk-based approach when selecting activities to be audited. This approach focuses our audit efforts on those operations that have been identified through a preliminary survey as having the greatest probability for needing improvement. Consequently, by design, finite audit resources are used to identify where and how improvements can be made. Thus, little audit effort is devoted to reviewing operations that may be relatively efficient or effective. As a result, our audit reports are prepared on an “exception basis.” This report, therefore, highlights those areas needing improvement and does not address activities that may be functioning properly.

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## **Response of Board of Education Officials to Audit**

A draft copy of this report was provided to Board officials for their review and comment. Their comments have been considered in preparing this report and are included as Appendix B.

Within 90 days after final release of this report, the Chancellor of the New York City Board of Education should report to the State Comptroller advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons therefor.



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# Internal Controls

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We judgmentally selected 13 schools to visit to examine the accuracy and the reliability of student attendance, enrollment, test scores and free and reduced-price meal data reported to the Board and to the Department. The Department expects that such data should be error-free. The schools we visited covered each of the five boroughs and included five high schools and an elementary and an intermediate school in each of four of the 32 CSDs. Our examination at the 13 schools showed that some schools had attendance data errors, discrepancies or omissions and some schools had inaccuracies in free and reduced-price meal program participation data.

While we found certain control weaknesses that increase the risk that student test results might be incorrectly reported, we also noted a best practice for detecting incorrect student test results. Our audit did not identify enrollment data inaccuracies. In addition, Board officials explained that the Board's Office of Community School District Affairs, Monitoring and Municipal Relations maintains a rigorous, risk-based process for reviewing and monitoring the accuracy of school attendance and enrollment data compilation and reporting. Board officials report that this activity includes site visits and follow up steps at about 250 schools each year. The presence of this attendance and enrollment data oversight function tends to strengthen the Board's control environment and procedures for assuring data accuracy.

We visited only 13 of the over 1,100 Board schools. Therefore, we cannot project either the incidence of errors in reporting from the schools citywide or their materiality in terms of state aid impact or information reporting. However, the presence of errors in attendance and free and reduced-price meal data at some of the schools does represent noncompliance with Board and Department expectations for data accuracy and reliability. The errors also raise questions about the validity of statistics and reports compiled from school information. Generally, our findings with attendance data were that student attendance recorded on official automated records conflicted with supporting information for students we sampled at the schools we visited. Documentation to support and explain such variances was not being maintained at the schools.

Our findings with free and reduced-price meal data were that errors in applications for the program were not detected when applications were reviewed. Findings with student test results primarily concern the

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opportunity to better assure data accuracy through better separation of duties.

We concluded that by strengthening internal controls, the Board can further reduce the risk that data can be materially inaccurate and unreliable and that State aid can be affected. Our auditing of data controls for selected Board schools is similar to our auditing of this topic for schools outside of New York City (Report 97-S-62, issued November 4, 1998).

Auditors' Comments: Subsequent to the conclusion of our audit field work, findings of fraud and irregularity with respect to the Board's student attendance and student test scores have been reported by the Moreland Act Commission and the Special Commissioner of Investigation of the New York City School District, respectively. These recent developments emphasize the need for internal controls to prevent and to detect data errors, omissions or inconsistencies.

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## Attendance

Section 3211 of the State Education Law requires all schools to maintain an accurate attendance and absence record for every student. Using the SA-129 form, the Board annually summarizes and reports to the Department the attendance data for all of the elementary, intermediate, and high school students in the City's public schools. It is essential for attendance data to be reported accurately because the Department uses it for many important purposes. For example, Department officials estimate that student attendance data affects the calculation of 80 percent of State aid payments for education.

The Department also uses attendance data as a performance measure. For instance, low attendance is associated with poor student performance on standardized tests. The factors that cause frequent absences, such as family problems and economic difficulties, may also cause students to leave school prematurely. The Department uses reported attendance rates as criteria for determining whether schools are eligible for the Attendance Improvement program which provides eligible schools with additional funds for activity intended to reduce student absences. Several reports published by the Department, including the *School District Fiscal Profile Report* and the School Report Card, note the average percentages, by school, grade level, and district, of pupils who attended school on each day of the academic year. State policymakers, school administrators, taxpayers, and parents use these reports to assess the performance of both students and schools.

The Board has guidelines for the recording and reporting of attendance data. About 60 staff from the Bureau of Attendance of the Board's Office

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of Community School District Affairs, Monitoring and Municipal Relations routinely visit the schools to instruct school personnel on the proper compilation and reporting procedures over attendance and enrollment data. These staff report their observations on pre-printed forms which outline improvements that are needed. Board officials indicate that a risk-based approach is used to select about 250 schools annually for visits.

The following paragraphs present the data accuracy findings from our school visits. We recommend that the Board consider this risk as it does its own risk assessment of other schools that we did not visit. For reviews at schools we visited, we recommend follow up to determine what, if any, corrective steps may be necessary for attendance data findings that we have identified.

### **High Schools**

Most high schools use a Daily Attendance Form (scan sheet) for recording the presence of students each day. Serving as the official attendance document, the scan sheet lists the students' names and identification numbers. At each school, the documents are scanned into a computerized database system operated by the University Application Processing Center (UAPC) of the City University of New York (CUNY). UAPC has contracted with the Board to compile and maintain these statistics for the City's schools. Data from the UAPC is furnished to the Board's central office so that overall high school attendance data can be reported to the Department. Each school has a daily summary of its scanned attendance statistics.

To complete our review of high school attendance data accuracy and control, we took a random sample of 95 students at five selected schools for the 1996-97 school year. For these students, we compared the schools' scan sheet attendance data with attendance data from the UAPC for the students in our sample. We found the following exceptions:

- For 25 students sampled at Benjamin Cardozo High School (Queens) we found that 36 days of absences recorded on the scan sheet did not appear in the UAPC data for 15 of the students.
- For 25 students sampled at John F. Kennedy High School (Bronx), we found one instance where a scan sheet had been improperly marked, preventing an absence from being recorded in the UAPC records. We also found that for ten of the students there was at least one day where an absence recorded on the scan sheet was not reflected in the UAPC records.

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- For 10 students sampled at Franklin D. Roosevelt High School (Brooklyn) we found that absences recorded for them on the scan sheets did not appear in the UAPC records. The number of discrepancies for each student ranged from 1 to 60 days.
  - For 10 students sampled at Seward Park High School (Manhattan), we found that more absences appeared on the scan sheets for all 10 of the students than appeared in the UAPC records, with the differences ranging from 1 to 28 days.
  - For 3 of the 25 students sampled at Tottenville High School (Staten Island), we could not find the scan sheet records. When comparing the available scan sheets to corresponding UAPC data, we found variations in the records of four students. We noted a total of 34 additional absences recorded on the scan sheets for three students that did not appear on the UAPC data. We also found 34 absences recorded on the UAPC data for one student that did not appear on the scan sheets.

School officials generally explained that the reason we found more absences on the scan sheets than on the UAPC records for the sampled students was because absences recorded on the scan sheets had been subsequently reversed when students' attendance was later confirmed. However, the schools generally did not maintain documentation supporting attendance reversals. We also found at one high school that scan sheets for certain students in our sample could not be located. This can be indicative of a problem because the attendance system default indicates a student is present unless a scan sheet specifically records the student as absent. Thus, without being able to locate and review scan sheets, it cannot be readily verified whether a recorded attendance for a student is valid. Therefore, if scan sheets were not entered the system would automatically count all students as present. To strengthen attendance controls, high schools ought to periodically reconcile scan sheet data and attendance reversal documentation with attendance records maintained by the UAPC.

Board officials explained that it was cumbersome and difficult to use the UAPC application to help construct an audit trail after the fact for reversal transactions. However, Board officials acknowledged the need to have all official attendance records in agreement. They indicated that the High Schools will be moving to a new computer application, the Automate the Schools System, that does facilitate the record keeping and control to account for all attendance transactions, including reversals.

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## **Elementary and Intermediate Schools**

Both the elementary and intermediate schools, like the high schools, generally record absences on a scan sheet that is produced on a daily basis for each class. Listing the names of the students in the class, the student identification numbers, and the previous day's attendance, it is considered to be the official attendance document and is processed by the attendance office into the Automate The Schools (ATS) system, a computerized database management system. ATS generates attendance reports in various formats, including breakdowns of data by CSD, school, and individual student. At the end of the school year, ATS generates reports that summarize the total number of attendance days, which are then transmitted by the Board to the Department. The Report of Individual Student Attendance (RISA), one of the reports generated by ATS, is a compilation of and reflects the information that teachers had reported throughout the year for each student.

During our field visits, we noted that some elementary and intermediate classroom teachers use a Working Class List (WCL), which is similar to a roll book, for attendance-taking. These teachers transfer absences from the WCL to the scan sheets for input into ATS; a two-step process that increases the likelihood that errors or discrepancies may occur.

When we reviewed the attendance data at eight elementary and intermediate schools by comparing RISA reports to scan sheets and/or WCLs, we sometimes found discrepancies between WCL data and the RISA information. At IS 62, where we were found no exceptions in our records comparisons, we noted that the school was routinely checking RISA records to WCLs and was making corrections as needed on a timely basis. Such procedures were not implemented at the other schools. Board officials pointed out that the WCL is not an official Board record of attendance. They added that certain teachers prefer to maintain the WCL and the Board has not mandated that the teachers do otherwise. Officials added that the WCL was a back-up system to enable teachers to record attendance if they were unable to access the ATS scan sheet on a particular day. Officials further indicated that discrepancies between a WCL and official attendance records can be expected in certain situations such as when a substitute teacher takes over a class and does not use the WCL. However, in response to our findings, Board officials indicate that they plan to take steps to eliminate the WCL.

(In response to our draft audit report, Board officials stated that a future review would determine the status of the WCL.)



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Auditors' Comments: At a meeting with Board officials, we were advised that plans were under development to eliminate the WCL. We are concerned that the Board now indicates uncertainty about the future status of the WCL. During our audit field work we demonstrated to the Board that, at selected elementary and intermediate schools that we visited, we were unable to reconcile WCLs with official attendance records for about half of 210 sampled students. While there can be valid reasons for the two records to not reconcile, it is also possible that the variation is indicative of incorrect practices or improper attendance taking. As our audit points out, the WCL is not efficient and creates a potential for errors to be introduced into the attendance recording process.

When we tested attendance data accuracy at schools we also noted the following:

- At IS 45 (Bronx), where teachers take attendance and enter absences directly on the scan sheet, we reviewed the attendance records for 13 randomly-selected students for the month of September 1996. We found that one more absence had been recorded on the scan sheet for 5 of these 13 students than appeared on the RISA.
- At PS 105 (Brooklyn), over the 10 month school year, 4 of 13 sampled students had discrepancies between attendance data on scan sheets and the RISA reports. For two students, days missed according to the RISA reports were greater than the scan sheets by one day or less. For each of the two other students, days missed according to the RISA reports were less than the scan sheets by one day.
- At PS 221 (Queens), we found no discrepancies between RISA reports and scan sheets for September 1996 for 25 sampled students.

It was unclear why these discrepancies existed. To strengthen attendance controls, the schools ought to periodically reconcile scan sheet data with RISA reports.

(In response to our draft audit report, Board officials object to our use of the word "errors" to describe, in particular, problems we note with attendance data. The Board also indicates a belief that our report explains that most of the attendance discrepancies result from valid corrections.)

Auditors' Comments: We believe that it is appropriate to use the words "errors," "discrepancies" or "omissions" in describing our attendance

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findings. While proper practices would suggest that the attendance data on the system should be fully supported by the input records and other supporting information, such was not the case in several instances, particularly at certain of the high schools we visited. The explanations provided in our report about the data accuracy findings were provided by school officials; however, they were unable to provide documentation to support the explanations. There clearly could be other explanations as well.

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## **Student Test Scores**

Elementary and intermediate students in New York State periodically take standardized achievement tests to measure their academic performance. Prior to the 1998-99 school year, Pupil Evaluation Program (PEP) tests for reading and math were given to students in grades 3 and 6 and a writing test was given to students in grade 5. (As of the 1998-99 school year, PEP tests are given to students in grades 4 and 8.) Program Evaluation Tests are intended to evaluate the effectiveness of instructional programs in elementary science for grade 4 and in social studies for grades 6 and 8. Preliminary Competency Tests in reading are given students in grade 8. State-sanctioned Regents examinations provide a similar measure for high school students. In addition to providing an assessment of personal achievement, test scores are an important institutional performance measure, at the school, CSD and DHS level. State policymakers, taxpayers, and parents use the results of these tests to evaluate the effectiveness of education programs.

The Board's Division of Assessment and Accountability Scanning Center (Center) receives the completed answer documents directly from CSD offices for elementary and intermediate schools and from DHS offices for high schools that do not have their own computer scanners. The Center verifies that the appropriate number of documents have been received, scans the documents, compiles the test results, and reports the compilations in published form.

To ensure that the Board is exerting proper control over the tests, all examination materials must be secure and accounted for before, during, and after the testing. While the Board distributes the Citywide performance assessments, the State mandated exams are distributed directly to the schools. We found that the undistributed test booklets at the Center were not counted as part of the procedures for accounting for all of the total number of booklets that had been received and distributed. Thus, the Center could not be assured that accountability was maintained for all booklets, a task made even more difficult by the lack of sequential pre-numbering. Without accounting for all the test booklets, the Board could not be assured that more booklets than necessary were not distributed

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prior to the exam. Such unaccounted for booklets could be used to provide substitute answers.

To ensure the integrity of the scoring of machine-processed examinations, the Center analyzes completed answer sheets to identify those where erasures changed incorrect answers to correct answers at a higher than average rate. The Center then identifies the classes which processed a higher than average rate of such revised answer sheets. Board officials told us that investigations are done and reports of findings and conclusions are prepared for the classes with the high erasure rates. Punitive actions are reportedly taken if warranted. The following table illustrates erasure analysis statistics for the 19,402, 19,182 and 10,792 classes that took the spring 1997 Citywide Math, Citywide Reading and Statewide Reading tests, respectively, at Board schools.

Type of Test	Answer Sheets Scanned	Reported Problem Classes	Problem Class Answer Sheets	Answer Sheets Altered	Percentage of Answer Sheets Altered to Problem Class Sheets	Percentage of Answer Sheets Altered to Total Sheets
Citywide Math	438,651	32	873	282	32%	.06%
Citywide Reading	456,554	39	1,047	315	30%	.07%
Statewide Reading	203,489	42	1,163	359	31%	.18%
Totals	1,098,694	113	3,083	956	31%	.09%

The analysis shows that overall there is only a very small percentage of potentially problematic altered answer sheets. However, the analysis also isolates the potentially problematic altered answer sheets to a number of specific classes where these answer sheets appear to comprise about 30 percent of the total answer sheets for the classes. We believe that the Board's erasure analysis is an effective control over the integrity of machine-processed examination results. The Board ought to share this technique with the Department so the technique can be shared with other districts as appropriate. In addition, this control procedure tends to compensate for the general lack of separation of duties in the student testing process whereby teachers proctor or supervise their own students as the students take tests. To further ensure the integrity of machine-processed examinations, the Board should require that when students

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complete these examinations, their answer sheets are provided for further handling to someone other than the students' regular teacher.

(In response to our audit report, Board officials do not agree that after machine-processed, standardized tests are completed by students, someone other than the students' regular teachers should handle them. They believe that the erasure analysis affords the necessary internal control.)

Auditors' Comments: By giving these examinations back to the students' teachers, there are clear risks. For example, teachers may fill in blank answers with correct answers. In as much as the Board's own erasure analysis confirms that cheating on these exams is a risk, the added internal control appears warranted and would complement the erasure analysis. Also, the erasure analysis is geared toward detecting severe cases of cheating.

Each CSD is responsible for collecting all of the completed answer sheets from all of its schools. According to procedure, all schools are to collect and batch these sheets immediately after the end of the testing period and are to submit the sheets by 2 p.m. of the test day to the CSD office, which then forwards the sheets to the Center for marking and processing.

On May 6, 1998, we visited CSD #10 to review the log sheets used for recording receipt of the answer sheets. On that day, students in grades 3, 6, and 8 had taken the reading tests. We observed that, 5 (11 percent) of the 44 schools located in that CSD had still not delivered the sheets as of 4:30 p.m. We also observed that only 3 of the 39 schools that did return the answer sheets had also returned the required Deputy and Proctor Certificate, a statement signed by everyone who assisted in the administration of the tests, attesting that all relevant rules and regulations had been followed. Because any breach of these test-processing rules could compromise the integrity of the testing process, the Board should require that each CSD enforces them.

In response to our observations, the Board stated that some procedures would be changed and that our recommendations would be addressed. Board officials also pointed out that the erasure analysis was a problem only in a small percentage of classes that took the tests.

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## **Free and Reduced-Price Meals**

The Federally-assisted National School Breakfast and Lunch Program provides free or reduced-price breakfasts and lunches to qualified elementary, intermediate, and high school students. On an annual basis, the Department collects Free and Reduced-Price Meal (FRPM) data for each school on Basic Educational Data System forms. The collected

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information is used in the calculation of several State aid categories, including Extraordinary Needs Aid, Educationally Related Support Services, Universal Pre-Kindergarten Grants, and Grants for Early Grade Class Size Reduction. The Department also reports FRPM data in several of its publications, including the Annual School District Fiscal Profile Report and the New York State School Report Card.

The School Report Card compares the performance of students in each school with that of students in similar schools throughout the State. One criteria for this comparison is the proportion of children receiving free meals, interpreted by the Department as an indicator of poverty level. Poverty is connected to student achievement, because students who live in poorer areas generally have greater educational needs. If these statistics are not reported accurately, improper comparisons may be made.

Participation in the program is requested by each student's parent or guardian when they complete an FRPM application form. Qualifications for program participation are based on household size and income. Students whose families are eligible for Aid to Dependent Children (ADC) are automatically eligible for free meals. School officials base their eligibility decisions solely on the application form; no additional documentation is required. Once the student is determined to be eligible, school officials authorize participation in the program. We reviewed the eligibility determination and record-keeping for this program at 12 schools, including 3 elementary schools, 4 intermediate schools, and 5 high schools. The review encompassed a total of 462 student records. We reviewed school records for the 1996-97 school year, except for IS 172 (Queens) and Franklin D. Roosevelt High School (Brooklyn). The records for that school year had not been retained at those schools, therefore, we reviewed the records for the 1997-98 school year. We did not verify the accuracy of the data on the applications; we were concerned only with the question of whether the data, as reported, indicated that the students were receiving the benefit to which they were entitled.

Apparently, applications were not always reviewed with care. Although the 15 errors we found in FRPM application-processing at 5 of the 12 schools we visited were not dramatic, they raised questions about the overall accuracy of the FRPM data. Our review showed no discrepancies at seven schools; PS 86 and IS 45 (Bronx), PS 173, IS 90, and Seward Park High School (Manhattan); IS 62 (Brooklyn); and Tottenville High School (Staten Island). Errors were detected at the following five schools:

- In our random sample of 43 students reported as eligible for FRPM at IS 172 (Queens), we found one student receiving free meals who should have been receiving reduced-price meals.

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- In our random sample of 41 students reported as eligible for FRPM at PS 221 (Queens), we found that all of the students had been classified properly. However, the applications of 6 students did not have the signature of the school official who was supposed to approve them. As a result, there was diminished assurance that these applications had been reviewed properly.
  - In our random sample of 45 students reported as eligible for FRPM at Benjamin Cardozo High School (Queens), we noted that two of the students receiving free meals should have been placed in the reduced-price-meal category. Two others who were receiving reduced-price meals should have been receiving free meals. The application for the fifth was missing; therefore, we could not determine whether the student was eligible for FRPM.
  - Because the John F. Kennedy High School (Bronx) did not maintain a separate list of students who were eligible for FRPM, we took a random sample of 46 students that included some who were ineligible. Although school officials had categorized 37 of the 46 students as eligible, we found that 2 of these were not eligible, according to the income guidelines.
  - In our random sample of 46 students reported as eligible for FRPM at Franklin D. Roosevelt High School (Brooklyn), we could not determine whether one of the students was eligible because his application was missing; the remaining 45 were eligible.

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## **Recommendations**

1. As part of the risk assessment process of the Bureau of Attendance, consider the attendance data differences at the schools that we visited. For any reviews at the schools we visited that had differences, follow up to determine what, if any, corrective steps may be necessary.

2. Provide schools with specific direction on control procedures to follow to routinely verify that automated attendance records properly reflect authorized attendance transactions.

(Board officials respond that they agree with recommendations number 1 and number 2.)

3. Continue with plans to eliminate the WCL.

(Board officials disagree with recommendation number 3 and respond that the status of the WCL will be determined in Spring 2000.)

Auditors' Comments: We reiterate our concern that about the risk that the WCL creates for errors to be introduced into the reporting process.

4. Share the student test erasure analysis technique with the State Education Department so that this best practice can be shared, as appropriate, with other districts in the State.

(Board officials agree with recommendation number 4.)

5. Establish procedures requiring that, once machine-processed examinations are completed by students, answer sheets are provided for further processing to someone other than the students' teachers.

(Board officials disagree with recommendation number 5. They believe that the erasure analysis provided sufficient internal control.)

Auditors' Comments: As our report points out, certain risks would not be addressed by the erasure analysis and the analysis detects only severe exceptions.

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### **Recommendations (Cont'd.)**

6. Account for all undistributed test booklets as well as those which are distributed and received.
7. Monitor and reinforce the requirement that schools deliver completed tests, as well as the Deputy and Proctor Certificates to the CSD by the specified time.

(Board officials agree with recommendations number 6 and number 7.)

8. Provide additional instruction to school administrators that they must review carefully and categorize correctly free and reduced-price meals applications.

(Board officials disagree with recommendation number 8 and seek more specific suggestions from our report.)

**Auditors' Comments:** The Board should increase its focus on results that it desires to achieve. If errors continue despite additional instruction, we urge the Board to pursue investigations and disciplinary actions.



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## Major Contributors to This Report

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Jerry Barber  
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Tom Trypuc  
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**BOARD OF EDUCATION OF THE CITY OF NEW YORK**

**RUDOLPH F. CREW, Ed. D.,** *Chancellor*

OFFICE OF THE CHANCELLOR  
110 Livingston Street - Brooklyn, NY 11201

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December 10, 1999

Mr. Jerry Barber, Audit Director  
Office of the State Comptroller  
A.E. Smith State Office Building  
Albany, New York 12236

Dear Mr. Barber:

The revised version of the draft audit report pertaining to Accuracy of Selected School Data at the New York City Board of Education (report 98-N-2) received on November 29, 1999 has been reviewed by the Board of Education and our response to the specific recommendations are attached.

I'd like to express our appreciation for your consideration of the concerns that had been expressed over some of the issues included in the original draft report submitted to Chancellor Crew on September 23, 1999. The fact that your audit team met with Board of Education officials to discuss these concerns is indicative of a spirit of mutual respect and consideration that can only serve to strengthen the accountability efforts of the system and, in turn, to improve the service provided to the children of our city.

The revised draft version of the audit report is more reflective of the status of the school data that was being reported on. One primary concern that remains is the use of the term "errors" in relation to your findings, specifically on Page 4 of the draft report. For example, in the body of the report there is an explanation that most of the attendance discrepancies are the result of valid corrections that lead to the final entry of official data. To use the term "error" in this context, thus, appears to contradict your own findings. I would ask that you review this language and make any appropriate changes before issuing the final report.

Thank you and the audit team for your hard work and diligence in the completion of this study. We are particularly appreciative of the collegial manner in which your office addressed and responded to our issues of concern related to the original version of the draft report.

Sincerely,

Lewis H. Spence  
Deputy Chancellor of Operations

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**Recommendation 1.** *As part of the risk assessment process of the Bureau of Attendance, consider the attendance data differences at the schools that we visited. For any reviews at the schools we visited that had differences, follow up to determine what, if any, corrective steps may be necessary.*

**Response:** We agree with this recommendation. The thirteen schools will be among the 400 schools reviewed this fiscal year. In addition to our normal monitoring procedures, we will investigate the differences cited in the audit report and take the necessary steps to correct them. A report of findings and recommendations will be submitted to the Bureau of Attendance during the Spring Semester.

**Recommendation 2.** *Provide schools with specific direction on control procedures to follow to routinely verify that automated attendance records properly reflect authorized attendance transactions.*

**Response:** We agree with this recommendation. As of February 2000, high schools will be moved to a new computer system that will facilitate the record keeping, tracking, and control of all attendance transactions, including reversals. The audit trail and review process will be strengthened involving attendance reversals. A memorandum defining and clarifying procedures will be disseminated prior to February 2000.

**Recommendation 3.** *Continue with plans to eliminate the WCL.*

**Response:** We respectfully disagree with this recommendation. The Working Class List has never been an official document. It was developed for use as a backup document and has always been utilized specifically for that purpose. The Working Class List will be reviewed and a determination of its future use will be made during the Spring 2000 Semester.

**Recommendation 4.** *Share the student test erasure analysis technique with the State Education Department so that this best practice can be shared, as appropriate, with other districts in the State.*

**Response:** We agree with this recommendation. We will contact our counterparts in the SED to share information regarding erasure analysis techniques by the end of the fiscal year. It should be noted that the erasure analysis conducted by the Board is a statistical technique intended to flag classes and schools in which there are a high number of erasures as "outliers" where potential problems may exist that require further investigation. Thus, the labeling of the chart in which these data are presented is misleading. The column headings should be changed to reflect the intent of the erasure analysis. Thus, the headings would be changed as follows:

FROM  
Reported Problem Classes  
Problem Class Answer Sheets  
Percentage of Answer Sheets Altered  
to Problem Class Sheets

TO  
Classes with high erasures (b)  
Number of Answer Sheets in b (c)  
Percentage of Answer Sheets in  
In Classes (d)

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***Recommendation 5. Establish procedures requiring that, once students complete machine-processed examinations, answer sheets are provided for further processing to someone other than the students' teachers.***

**Response:** We respectfully disagree with this recommendation. After the administrations of the examinations are completed, teacher involvement is limited to review of the answer document for extraneous marks that would not obviate the possibility of the answer documents being altered. In addition, the audit points out that the erasure analysis that is presently in place is a control that is effective for identifying documents that may be altered.

***Recommendation 6. Account for all undistributed test booklets as well as those which are distributed and received.***

**Response:** We agree with this recommendation. The inventory system at the scan center is being upgraded with new software and staff is being trained in its use to provide additional accounting for all test material. These actions should be completed by the end of the fiscal year.

***Recommendation 7. Monitor and reinforce the requirement that schools deliver completed tests, as well as the Deputy and Proctor Certificates to the CSD by the specified time.***

**Response:** We agree with this recommendation. The time required for schools to return test material to the district offices has been moved from 2 p.m. to 1 p.m. In addition, a monitor will be present in every district office to oversee the collection of Deputy and Proctor Certificates and the return of answer documents to make sure that everything was performed in a timely and secure manner. These procedures should be implemented by the end of the fiscal year.

***Recommendation 8. Provide additional instruction to school administrators that they must review carefully and categorize correctly free and reduced-price meals applications.***

**Response:** We respectfully disagree with this recommendation. Each year Chancellor's Regulations detailing the federal regulations governing eligibility for free and reduced price meals are distributed to school principals. In addition, a sampling of the applications is reviewed for accuracy and technical assistance and on-site training in the proper method of approving and categorizing the breakfast and lunch applications is provided annually to school personnel. There are a variety of other instructional efforts made available to school administrators in this area. We believe that our procedures are adequate but will consider any specific recommendations the auditors may have to improve this process.