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General Accounting Office
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Accounting and Information
Management Division

B-265855

August 28, 1995

The Honorable James T. Walsh
Chairman
Subcommittee on District of Columbia
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This letter responds to your June 30, 1995, request for information regarding the recent sample of the student enrollment population of the District of Columbia Public Schools (DCPS). Dr. Franklin L. Smith, Superintendent of DCPS, requested that an internal student enrollment audit be performed because of concerns that a sizable discrepancy existed between DCPS's school year 1994-1995 enrollment figures and the enrollment reported in the 1990 federal census. DCPS's enrollment figures were being questioned because they have remained constant while the District's population has been declining. An accurate and complete accounting of students is essential to answering fundamental questions such as the needed number of schools and their location and per pupil costs.

You asked us to (1) describe the work we performed in connection with this sample, (2) evaluate the sampling plan prepared and the procedures performed by DCPS, (3) evaluate the sample results, and (4) suggest ways to either improve the sampling process or provide a different approach to determine the student enrollment population.

Our response to your questions is based on the knowledge we gained as observers of the student enrollment count, which took place on May 16 to 18, 1995; our review of the DCPS's Coordinator's Management Report and F.S. Taylor & Associates, P.C. (an outside contractor hired to assist the DCPS with its student enrollment count) Report on Accumulation of Membership Count Sample, both dated June 30, 1995; our calculation of the sample error rate, confidence interval, and confidence percentage for the known errors; and our discussions with officials from the Bureau of the Census. We

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discussed the results of our work with Dr. Franklin L. Smith, Superintendent of DCPS, and have incorporated his comments where appropriate.

RESULTS IN BRIEF

The results of DCPS's sample of the student enrollment population do not conclusively resolve the question of why there exists a difference between the DCPS's school year 1994-1995 student enrollment of 80,450 and the 67,278 students reported by the 1990 federal census. DCPS's sample was not designed to resolve this difference; reconciling these figures would not be feasible since they represent the results of two different processes applied in different years. Furthermore, the two totals do not represent the same school grades.

The DCPS figure of 80,450 represents all persons enrolled in District public schools regardless of grade or educational program, except adult education programs. The 1990 census figure of 67,278 represented elementary through high school students but excluded 5,532 nursery school and kindergarten students separately categorized in the census. For comparison purposes, DCPS's enrollment of 80,450 should be compared to 72,810--the total of the census figures.

The usefulness of DCPS's sample in validating DCPS's reported student enrollment is limited because of mistakes made in selecting the sample. The student population of 80,978 in DCPS's unadjusted student database, from which the sample was selected, does not agree with the 80,450 taken from the class membership sheets documenting the teachers' enrollment count of September 29, 1994.

Notwithstanding the mistakes DCPS made in selecting the 1,011 students in its sample, the estimate of 75,000 students enrolled that results from projecting the sample would suggest that DCPS's unadjusted student database contained the names of approximately 5,000 students who were not actually enrolled as of September 29, 1994. Therefore, for DCPS's official student enrollment count of 80,450 to be correct, the teachers' enrollment count would have to have identified an additional 5,000 students that were not in the student database as of September 29, 1994.

While the sample results do not by themselves invalidate the teacher enrollment count of 80,450, they also cannot be used to validate the 80,450. Because the 80,450 remains untested, this figure could be misstated due to errors in the counting

or accumulation of the count results. Moreover, the sample results call into question whether each school is updating the student database for student additions and deletions in a timely manner.

BACKGROUND

Each school year, the superintendent of DCPS requests that school principals verify the enrollment of students listed as attending their schools in the Student Information Management System (SIMS). The SIMS is a database containing information on students such as name, birth date, school grade, and attendance. The school year 1994-1995 enrollment reporting procedures required that class membership sheets be printed from SIMS and that the enrollment of listed students be verified by teachers on September 29, 1994. On April 28, 1995, Dr. Franklin L. Smith, Superintendent of DCPS, requested that an internal student enrollment audit be performed because of concerns that a sizable difference existed between the enrollment reported by DCPS and the 1990 federal census.

Internal DCPS personnel and outside contractors were responsible for

- obtaining, on a test basis, evidence supporting the official 1994-1995 school year student enrollment of the public schools as of September 29, 1994;
- evaluating the relevance, reliability, and sufficiency of evidence of student enrollment obtained; and
- reporting to Dr. Smith the test results and any other relevant findings.

The evidence supporting student enrollment included verifying the attendance of a sample of students by making visits to schools. This sample was planned and selected by DCPS employees.

F.S. Taylor & Associates, P.C., as outside contractors to DCPS, accumulated the results of the count, accepted and controlled the count sheets returned daily by the counters, and reviewed the count sheets for proper completion and acceptable documentation. Where acceptable evidence supporting student enrollment was not found by the counters or the documented count results were unclear, F.S. Taylor traced student names to the class membership sheets used by

teachers to document the official student enrollment as of September 29, 1994.

F.S. Taylor noted that some students' names were not found on these sheets while others were marked by the teachers as being no shows or not enrolled. For those students whose names were on the class membership sheets but whose enrollment status was unknown, F.S. Taylor attempted to verify the student's enrollment by visiting schools and obtaining evidence of attendance, transfer, or withdrawal. F.S. Taylor's June 30, 1995, report details the results of its work.

GAO's ROLE IN CONNECTION WITH THE SAMPLE

On May 4, 1995, Dr. Smith asked that GAO observe the performance of enrollment count procedures established and performed by DCPS employees under the direction of a coordinator from the Office of Educational Accountability, Assessment and Information.

Our responsibility as independent observers was strictly limited to informing Dr. Smith as to whether the counters we accompanied followed established counting procedures. We have provided your office with our June 6, 1995, letter to Dr. Smith which documents our observations.

Further, in discussions with DCPS officials, we explained that their sampling plan design needed to ensure that the final results would be projectable to the student enrollment population. Our responsibilities as independent observers did not constitute an audit of the enrollment count and, accordingly, we do not express an opinion on how the count was planned and performed or on the accuracy of the enrollment count. However, as discussed below, the work we did at your request identified problems with the usefulness of the sample results.

EVALUATION OF THE SAMPLING PLAN PREPARED AND THE PROCEDURES PERFORMED BY DCPS

The usefulness of the sample results in determining the accuracy of DCPS's enrollment numbers is limited because the student enrollment population of 80,978 in SIMS, from which the sample was chosen, did not agree with the officially reported student enrollment of 80,450 taken from class membership sheets documenting the teachers' enrollment count of September 29, 1994. The sample should have been taken from SIMS, adjusted for changes from the officially reported

student enrollment count done by the teachers, since this count was the basis of the DCPS reported enrollment figure. As a result of this mistake, the sample results can only be projected to the unadjusted SIMS database that was known to be incorrect.

STATISTICAL EVALUATION OF THE SAMPLE RESULTS

Of the 1,011 students sampled from SIMS, evidence did not exist to support the enrollment of 76 students, a 7.52 percent error rate. This sample error rate, when projected at a 95 percent confidence level to the student population from which the sample was taken, results in a confidence interval between 6.20 percent and 9.03 percent. Assuming that the counts were correctly performed and compiled, the sample projection of 75,000 students would suggest that DCPS's unadjusted student database contained the names of approximately 5,000 students who were not actually enrolled as of September 29, 1994.

The DCPS does not consider 64 of those 76 students to be errors. The DCPS coordinator's report stated that the names of these students were not found on the official class membership sheets supporting the reported enrollment of 80,450 and should, therefore, be excluded from the projection of errors to the 80,450.

This conclusion is statistically erroneous because the sample was taken from the unadjusted SIMS population of 80,978 and, therefore, can be projected only to that population. Since the class membership sheets teachers used to perform the enrollment count on September 29, 1994, were taken from SIMS unadjusted, any instances where students in the sample taken from SIMS were not found on the class membership sheets should be considered errors for the purposes of statistically projecting the results to the SIMS. The sample results cannot be projected to the class membership sheet total of 80,450.

For DCPS's official student enrollment count of 80,450 to be correct, the teacher count would have to have identified an additional 5,000 students that were not in SIMS as of September 29, 1994. We do not know how many students were added as a result of the teachers' enrollment count. While the sample results do not alone invalidate the teacher enrollment count of 80,450, they also cannot be used to validate the 80,450. Because the 80,450 remains untested, this figure could be misstated because of errors in the counting or accumulation of the count results. Moreover, the

sample results call into question whether each school is updating the student database for student additions and deletions in a timely manner.

ESSENTIAL ELEMENTS FOR OBTAINING AN ACCURATE COUNT OF THE STUDENT ENROLLMENT POPULATION

To ensure that an accurate count is taken of student enrollment, it is essential that effective procedures, and oversight to ensure their implementation, are used. These procedures should ensure that student information is accounted for accurately and in a timely manner. The following observations provide essential features of any such process for accurately accounting for student enrollment.

- Document all policies and procedures for the enrollment, attendance, transfer, and withdrawal/removal of students from the SIMS and require that all schools consistently follow them.
- Establish procedures requiring that schools obtain and maintain acceptable evidence of student residency, attendance, transfer, and withdrawal/removal.
- Establish computer controls to ensure the accuracy, completeness, and security of all student data.
- Perform annual counts of all students and obtain acceptable evidence to support the update of SIMS.
- Perform periodic audits of the student enrollment population using statistically valid projectable samples to determine the accuracy of the enrollment figures and identify weaknesses in DCPS's controls and systems.

The key to ensuring that procedures, controls, and information systems work effectively is proper supervisory oversight. This oversight should ensure that critical information on each student enrolled in District public schools is complete and accurate. Dr. Smith has expressed his commitment to having an independent accounting firm perform a thorough count of students during the 1995-96 school year.

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If you or your staff have any further questions, please call me at (202) 512-9510 or Scott E. McNulty of my staff at (202) 512-9184.

Sincerely yours,


Gregory M. Holloway
Director, Civil Audits

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