

Attachment 1

State Education Office (SEO)

Stopgap student tracking proposal

Background

The city of Washington DC does not possess an information system through which the location and movement of all public school students (DCPS and charter) can be accurately tracked, using their unique student ID number. Such a system would enable the school location of students and their academic and demographic information to be readily available. In the current environment, students may leave a school, and disappear from the system. This is because the student information systems for charters and DCPS do not interface and there is no single junction for control of students exiting one system and entering another (via their unique student identifier). This situation also makes it difficult to maintain accurate student information as students move from school to school, or exit/enter the system. It also impedes research and planning.

Councilmember Kathy Patterson has requested that immediate measures be taken by the SEO to put in place a student tracking system. This system, which can be housed and maintained by the SEO, should allow for near-real-time access of critical student records. This paper describes the implementation of a stopgap strategy to be used for the 2005-2006 school year, in preparation for the development of a more comprehensive system.

Over the longer term, it is proposed that a comprehensive citywide longitudinal data warehouse be developed to take care of the data storage, exchange and mining (processing to develop insight into operational environment) needs of the public educational systems of Washington DC. Ultimately, this data warehouse will encompass student tracking, provide access to student achievement information, permit cost analysis, track teacher progress, conduct growth gains analysis and perform several other functions. The data warehouse is a multi-year project that is planned to be launched in FY07, and will be a part of EdSMP (Education Systems Modernization Project (EdSMP)). EdSMP is a city-wide education systems transformation project that will vastly improve the way the city tracks and archives student information across all agencies and schools. However, tracking students is an immediate need, and a stopgap measure is needed to fulfill this need right away while the data warehouse is evaluated, planned and implemented.

In the 2005-06 school year, DC STARS is used as the student information system for 177 DCPS schools and programs and the majority of 24 BOE PCS¹ (Public Charter Schools) (grouped under 18 LEAs). Largely all of the 43 PCSB PCSs (grouped under 34 LEAs) remain outside it.² The Student Tracking and Reporting System (STARS) is a generic system, and is likely to have the capacity to contain all data elements mentioned in this

¹ According to the DCBOE Public Charter Schools, three BOE LEAs have not been connected to DC STARS yet.

² Data from draft report from October 5 2005 Enrollment Audit.

memo. However, the non-participation of almost all of the 43 PCSs (34 LEAs) in DC STARS means that it is less than a complete system.

The stopgap student tracking proposal

In order to track students in the short term, while the citywide student tracking system gets developed, the SEO proposes that we receive a limited set of data elements from DCPS, Board of Education (for BOE charter schools) and Public Charter School Board (for PCSB charter schools) at regular intervals (ideally, monthly). This information would be stored in a single database at the SEO, and would provide: (1) baseline information on student attendance and mobility; (2) a mechanism for reporting on the movement of students within and external to our local education systems; and (3) a way of documenting the number (but, as importantly, for purposes of provision of services, the identification) of students who drop out or are no longer served by our public schools. This information is essential in answering many of the critical questions that city policymakers have about how and whether our youth-serving agencies are addressing the needs of our students. A list of proposed data elements and a timeline are given in Attachment 2.

It is proposed that the SEO receive the specified data, generated as reports from the various systems (DC-STARS for DCPS and BOE charters and OLAMS for PCSB charters). These reports could be uploaded directly onto the SEO database, through a web-enabled link. SEO will manage this combined dataset, and utilize it to generate several reports (for example, a citywide student tracking report, a citywide truancy report).

Technical specifications for the stopgap system

Technical specifications for the system will depend on which option of accessing information is selected. If a database is needed to house information at the SEO, a simple system could be developed using an SQL database. The front-end (what users interact with) could be developed using vb.net. Since confidential information would be transmitted via the Internet, a Secure Socket Layer (SSL) would need to be used. It is estimated that there will be 400 users³ for the system (1 user per school, and room for expansion if needed) and 300,000 records (there are approximately 75,000 students⁴, but multiple tables will increase the number of records). The system will require 2 months to be up and running, and 1 month for initial adjustments.

Automating the system of obtaining student ID numbers

Presently, student ID numbers are provided by the DC-STARS system, operated by DCPS in its role as the SEA (State Education Agency). When student ID numbers are required by public charter schools, the numbers must be obtained by a school staff member physically going to the SEA offices, and providing the name and date of birth to the computer operator, who then provides them with a student ID number.

³ All schools total 244 in number according to the draft October 5 Enrollment Audit Report. The extra capacity in the system will allow usage by personnel in DCPS, the public charter authorities and any other parties that may need and be allowed access, besides ensuring room for expansion in the school network.

⁴ The draft October 5 2005 Enrollment Audit Report indicates a total student population of 74,984.

As a part of the Stopgap Student Tracking Project (SSTP), we propose that the SEA automates its issuance and management of the student ID number. We propose that a web-based interface be developed, accessible by authorized personnel in schools. Schools could access the system when students are withdrawing or enrolling, and notify the system in case of a withdrawal or request a new student ID number the case of the enrollment of a student.

Beneficiaries of stopgap student tracking measure

Policymakers

- The SEO will generate reports on students that have been lost to the system, or gained by the system. It will develop base line reports on student retention, school enrollment stability, and student mobility rates (in and out of the DC public school systems, and between schools).
- These reports can be made available to city policymakers such as the city council, as well as city agencies such as the Child and Family Services Agency that want to know where their students are at any given time. The reports will seek to address key policy issues such as:
 - What is the holding power of our schools?
 - Where do students migrate within and external to our system of public schools?
 - Which schools benefit or lose from student mobility?
 - To what extent are the funds available to students where they are needed?
- In time, this information can provide the basis of a more sophisticated approach to funding schools on the basis of where specific student services are required, as well as a measure of accountability of school holding power.

Local Educational Agencies (LEAs) and State Education Agency (SEA)

- The LEAs and the SEA would have access to the database that is constructed by OCTO and populated and maintained by the SEO. For the stopgap project, the database will contain mostly location and mobility information. Access to the database should be available through a user-friendly internet-based front-end layer. All privacy regulations will be followed.
- The LEAs and the SEA would have access to routine student reports. This will enable them to immediately determine the status and location of a student.

As the system of tracking and automated enrollment and exit becomes more sophisticated, the process may provide a workable alternative to the current annual enrollment audit (a cost of approximately \$1 million).

What the SEO would insure as information broker

The SEO would provide summarized interim reports to the Mayor, DC Council, Board of Education, chartering authorities, DCPS and appropriate child-serving agencies to support policy decisions relating to student mobility, exit from the system, school attendance and enrollment (truancy interventions), and related funding and student service implications to schools and students.

Next steps

1. Conduct meetings need with DCPS superintendent, and BOE and PCSB officials.
2. Once the organizational head level meetings are completed successfully, then the details of the agreements and the working procedures can be sorted out between the CIOs and data/information officials and legal counsels.
3. Technical specifications and planning will then commence.
4. Progress of the project should be reported to all stakeholders on a regular basis, and the delivery of the system by April 2006 should be emphasized.

Attachment 2

List of proposed data elements

1. Student ID number
2. Student's name (last, first, middle initial)
3. Date of birth
4. Ethnicity
5. Address
6. Gender
7. School
8. Grade
9. Date of enrollment
10. Attendance (Number of days present in the past month)
11. Free and reduced lunch
12. LEP/NEP (Limited English Proficiency/No English Proficiency)
13. IEP (Individualized Education Program)

Attachment 3

**A Proposal from the State Education Office
for
A Longitudinal Data System for Washington DC¹**

Reflecting the national trend, educational agencies, policymakers and parents in Washington DC are calling for better information on student progress and the added value of teachers and specific schools on student achievement. In particular, the need for longitudinal data (data gathered on the same student from year to year) over the education life of the student is becoming increasingly apparent. Longitudinal data enables all stakeholders to follow the student's progress from grade to grade, highlights successful schools and programs, evaluates the impact of teacher preparation and training on student achievement, and focuses school systems on preparing a higher percentage of students to succeed in rigorous courses, college and employment.

The State Education Office would like to initiate dialogue across and among the State Education Agency, the chartering authorities, and Local Education Agencies (DCPS and public charter schools) on the feasibility, components of, and implementation of a statewide longitudinal data system modeled on the elements described below as recommended by the Data Quality Campaign, a national collaborative effort to encourage and support improvements in the quality of education data.

Essential elements of a state longitudinal data system

1. Unique student ID number
2. Enrollment, demographic and program participation information
3. Test scores
4. Information on untested students
5. Matching teachers to students
6. Courses completed, grades earned
7. College readiness test scores
8. Graduation and dropout
9. Tracking students across pre-K-12 and postsecondary systems
10. Audit system that assesses data quality, validity and reliability

The State Education Office (SEO) and the State Education Agency (SEA) of Washington DC need to ensure that student records can be easily transferred, student privacy is protected, data definitions and requirements are clear, and the structure of the data system facilitates data use and easy reporting.

1. Unique student ID number

A single non-duplicated student ID number permanently assigned to a pre-K-12 student will allow Washington DC to follow the progress of each student over time, while ensuring his or her privacy. Various fields of information about a single student (e.g. enrollment, program participation, demographics and assessment) can be tracked without revealing the identity of

¹ Based on recommendations in "Creating a Longitudinal Data System" by the Data Quality Campaign (2005).

the student, to evaluate programs, study student mobility patterns and evaluate the effect of mobility on performance. Possible uses of a unique student ID number are determining what achievement levels in early grades indicate success in later grades, and what test scores in early grades should serve as thresholds for intervention.

Presently, a unique student ID number is generated by DC STARS operated by DCPS, in its capacity as the State Education Agency. There are outstanding issues such as the existence of duplicate ID numbers, multiple records and other inaccuracies in the system.

2. Enrollment, demographic and program participation information

Information on student enrollment, demographics and program participation (such as special education or free and reduced lunch) can help evaluate the impact of schools, programs, student mobility and continuous enrollment on student achievement and learning.

Demographic and program participation data, connected to test results via the unique student identifier, can disaggregate test scores for special education, English language learner or free and reduced lunch students. Matching attendance data with subsequent state-wide assessments or end-of-course examinations can identify students who perform poorly despite good attendance.

Enrollment, demographic, attendance and program participation data need to be collected and permanently stored at a central office facility, minimally on an annual basis, ideally, continually or several times a year.

3. Test scores

A citywide database of individual results on mandated exams should be maintained with the ability to disaggregate results. Monitoring this data over time will allow the city to monitor student academic growth, and provide diagnostic information about students to teachers and principals. This data should be stored permanently and be available for research and program evaluation.

4. Untested students

NCLB requires states to keep track of the number and percentage of students who do not take state tests. But states need to know why these students are not tested, and be able to match their records to separate enrollment and program participation databases, to detect any patterns associated with specific student populations (e.g. special education students). Student-level records need to be created and maintained about which subject the student was not tested in and why.

5. Matching teachers to students

Matching teachers to classrooms enables us to understand the connection between teacher training and qualifications and student academic growth. Teachers also need to be given a unique identifier that allows them to be followed over time. This would provide the ability to keep track of which students and which courses are taught by teachers with different levels and types of preparation and certification, and which forms of teacher training and certification have the greatest impact on students' academic growth. This would allow for the

evaluation of teacher preparation programs based on students' academic progress. Combining this with student demographic information would allow the city to determine the impact of the experience level of teachers.

6. Courses completed, grades earned

Student-level transcript information should be collected, including course completion records and grades for all courses taken. This data can be aggregated to the school and district levels to detect patterns in overall student course-taking, and investigate the relationship between courses taken and college readiness. To make this possible, a citywide course classification system would need to be created, based on state standards. We can start with classification of courses in those areas where standards have been developed. Information on course completion should be linked to other measures of learning, such as test scores, college readiness exams, and data on students' need for remediation in college. This data can be used to detect grade inflation.

7. College readiness test scores

Reporting data on college admission, placement and readiness tests will be useful to assist in a successful transition from high school to postsecondary education. College readiness is reflected in SAT, SAT II, ACT, Advanced Placement (AP) and International Baccalaureate (IB) exam scores. Matching students' test scores in middle school with their college readiness scores in high school is one measure of the efficacy of the high school.

8. Graduation and dropout data

To obtain accurate graduation rates, we must accurately account for students moving through the public education system, and students leaving the system. We should be able to distinguish between students who drop out to get a GED, transfer from a DCPS school to a charter school and vice versa, transfer from a public school to a private school, or leave Washington DC. To obtain this, the enrollment data may need to be merged with data on students that have completed diplomas and GEDs. Graduation rates need to be calculated using the definition agreed upon in the National Governors Association (NGA) compact. A citywide coding system on the different reasons why students leave a school would need to be developed. By looking at the characteristics of students who drop out, we may be able to look for early warning signs in elementary and middle schools.

9. Tracking students across pre K – 12 and postsecondary systems

Better data on student success once they leave high school can help align expectations in high school with the demands of postsecondary education. Postsecondary institutions should provide aggregated annual feedback reports to individual high schools on the success of their graduates in the freshman year. Using the unique student identifier, records can be electronically exchanged between public high schools, community colleges and four-year colleges, while protecting student privacy and remaining within the bounds of federal law.

10. Audit system that assesses data quality, validity and reliability

A system should be in place that allows for identification of erroneous data, random spot-checks, and site visits as necessary to audit the validity of the data. Data elements, rules and interpretations concerning the entry and reporting of these data need to be clearly and

unambiguously defined. There must be specified consequences for submitting incomplete or incorrect information. Training and materials should be provided to ensure that rules, definitions and protocols are understood.

Other considerations

Privacy protection

Student privacy must be preserved. There is a distinction between applying a “unique student identifier” and making “personally identifiable information” available. The unique student identifier makes it possible to mine different data attributes of individual students without disclosing the identity of the student. Encryption and data security protocols must be used during transmission and transaction of data. These considerations must be central to the development of all data repositories and protocols.

Data architecture

Data architecture defines how data are coded, stored, managed and used. It should ensure that easy communication is possible between all entities that share data. Clear and uniform standards on data definitions, data formatting, data transferring process and data transferring frequency will reduce staffing resources and processing time needed, and ensure that clear and timely reports can be made available to users.

Data warehousing

A data warehouse is a repository of data. It should be easily queried and produce standard or customized reports. It should ensure student and teacher confidentiality, allow longitudinal analyses, and include analytical capabilities for users.

Interoperability

This is the ability of different software systems from different vendors to share information without the need for customized programming or data manipulation. It reduces reporting burden, redundancy of data collection, staff time and resources. It allows better, faster and clearer data reporting. It depends on systems having common data standards and definitions (addressed in element 10). The Schools Interoperability Framework Association (SIFA) works to ensure the creation of platform-independent, vendor neutral open standards that are available to educators and vendors.

Portability

This is the ability to exchange student transcript information electronically across districts and between Pre-K-12 and postsecondary institutions within a state and across states.

Professional development

The ongoing professional development of people charged with collecting, storing, analyzing and using the data produced is essential for the success for any longitudinal data system.

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| Researcher access

Student-level data should be made available to researchers while protecting the privacy of students under the Family Education Rights and Privacy Act. This will allow powerful research to be done at no cost to the city.