

Broward County Public Schools Reduces Dropout Rate with Increased Accessibility to Student Data

Broward County Public Schools
Fort Lauderdale, FL
www.browardschools.com

Industry:
Education and Research

Annual Revenue:
US\$5.07 Billion

Employees:
41,000

Oracle Products & Services:
Hyperion Business Intelligence
Hyperion SQR

"We're using Hyperion reports to help our students succeed. No dollar value or ROI can begin to reflect the long-term benefit to our students, or to society, of the information we now have at our fingertips with Hyperion." – Phyllis Chasser, Senior Data Warehouse Analyst, Broward County Public Schools

Like all public schools, Broward County Public Schools faced pressure throughout the 1990s to increase student performance. Due to the culturally and economically diverse population the county serves, this was—and still is—an enormous challenge. The district formed school improvement teams at each school to increase academic achievement and accountability. But a lack of access to student data severely hampered team members' effectiveness.

In the past, Broward used a student information transactional system called TERMS (Total Educational Resource Management System) as its main source for reporting. Using TERMS was cumbersome and time-consuming—gathering data required users to view between one and 20 different screens and then rekey the results into Excel spreadsheets. Some reports also required that a programmer write a report against TERMS to complete the request. Only a few administrators at each school had access to TERMS, leaving others to funnel requests through their very busy system administrators.

"Our 'best case' turnaround was approximately one week—long enough for both the data and request to completely change before the report was delivered," recalled Phyllis Chasser, senior data warehouse analyst with Broward County Public Schools.

"Teachers and administrators lacked the ability to make the instructional decisions that would enhance and improve student achievement and district planning."

Broward required a centralized, easy-to-use view of student data for all users throughout the district, with the ability to support the system's cross-platform computing environment. Further, Broward needed a system that would enable it to reduce the

Key Benefits:

- Transformed the way the schools educate students
- Reduced number of dropouts by spotting opportunities for intervention
- Supported multiple initiatives, including tracking test scores, attendance monitoring, and discipline referrals
- Enabled compliance with federal and state mandates for academic achievement
- Enabled beginners, as well as advanced users, to view and work with data
- Provided quick and easy access to data
- Reduced printing costs by more than US\$100,000 as well as gasoline and vehicle maintenance expenses associated with delivery of hard-copy reports
- Accelerated the course registration process

time needed to track and manually record student data and securely deliver it to both parents and students.

Broward County Public Schools implemented Oracle's Hyperion Business Intelligence and Hyperion SQR to provide centralized, easy-to-use views of student data for all users throughout the district. Together with an IBM data warehouse, the solution transformed the way the schools educate students, lowered the dropout rate, and reduced printing costs by more than US\$100,000. The solution also reduced gasoline and vehicle maintenance expenses associated with the delivery of hard-copy reports.

New System Delivers Meaningful Reports on Large Volumes of Data

In 1996, with the help of a US\$2 million IBM Reinventing Education grant, Broward County designed and built a data warehouse. At the same time, the school district added Hyperion (then Brio) as a reporting system, enabling three pilot schools to pull critical student data from the warehouse. Due to the success of that first implementation, 21 additional schools gained access to the reporting system the following year. Since then, Broward County has extended access to the data warehouse to all 281 schools and more than 17,000 users, making it possible for all teachers, district employees, and school administrators to gather data and create reports. The warehouse is populated with data on more than 300,000 students and with historical records for more than 700,000. Additionally, the system stores data for 91,000 current and former employees.

Four main sources of data feed the warehouse, including an IBM iSeries Model 870 for student transactions, an IBM mainframe for maintenance work orders, Windows NT servers for the county's HRMS data, and text files and tape from outside sources. Nightly electronic transmissions bring information into the data warehouse. Included in the warehouse are 335 tables, with 100 logical tables accessible to users. Although some of the tables are small, most contain between 3 million and 23 million records. The system gives users access to specific tables, or fields in the tables, through logical views, and maintains security through user IDs.

Web-based Reports Have Multiple Benefits

The county's robust data warehouse and reporting solution has become the backbone of all data and reporting activities at

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Broward County Public
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Broward. Thanks to the Web-based reporting, all users now have quick and easy access to data, Chasser said. The Web-based reporting environment is also ideal for schools that have computers running on different platforms and for users who have varying levels of technical proficiency.

Adding the Web-based reporting interface solved another of Broward County’s challenges—reducing the costs and hours needed to support its existing hardware infrastructure.

“Before we implemented Web reporting, each school had a small AS400,” Chasser said. “If we wrote a program that went into our district AS400, we would have to write another version and distribute it to all of the schools. Plus, we realized that when the maintenance contracts on those AS400 servers were up, we would have to either renew all of them or purchase new equipment. That would be very costly, in manpower as well as dollars.”

“By centralizing on an iSeries Model 870 and making Hyperion reports available on the Web, every school performs local reporting, and we enjoy a significant cost savings,” Chasser continued. “We no longer have hundreds of AS400s scattered throughout the district, yet Hyperion gives the schools even more reporting capabilities than they had before.”

Improved Student Performance

The data warehouse and Hyperion reporting system have dramatically changed the way Broward educates students and propels them to achieve—far beyond what was previously thought to be attainable. Data and reports permeate nearly every aspect of state reporting, monitoring, class management, test score improvement, and student counseling.

For example, the system’s Web report portal, called “Virtual Counselor,” is comprised of several reports and a collection of ASP pages. Through Virtual Counselor, students can schedule their classes online. Guidance counselors can then view the courses selected and either approve the schedule or suggest alternative classes.

“The combination of online scheduling and guidance counselors using the reports has dramatically accelerated the registration process,” Chasser noted. “Before Hyperion it used to be very, very slow.”

Broward teachers use Hyperion-based reports to enhance their curriculum planning, based on best practices. For instance, should student test scores in one teacher's class show steady improvement, other teachers can review that instructor's curriculum and incorporate those practices into their own lesson plans.

"We're beginning to link these types of reports to the curriculum," Chasser said. "Teachers are adding certain assessments into Virtual Counselor, which are then loaded into the data warehouse. In this way, everyone can see exactly what the best practices are, and really help students learn and perform."

Benchmark Detail Helps Drive Student Success

Like many states, school funding is partly determined by performance on standardized tests. Broward County Schools' research and testing department created benchmark tests built on the Florida Comprehensive Assessment Tests (FCAT). The benchmarks provide information about the expected proficiency of a student on the FCAT and are strong indicators of academic performance. Students' overall test scores are now archived in the data warehouse. Reports indicating performance down to an individual question, help teachers increase student learning and corresponding test scores.

"Using Hyperion applications, we produce a lot of reports which we use to help our students, especially the 'bubble kids'—those who could go up or down on the test," Chasser explained. "The benchmark tests and the reports help us do all we can to push those kids over the top on their scores."

Broward students receive still more academic support from Hyperion-based reports, Chasser added. Federal and state regulations require that a certain percentage of students in each school demonstrate annual yearly progress, or AYP. In Florida, the AYP is 44% for reading and 50% for math. With just a single report, school administrators can quickly determine whether they are in compliance with or exceeding the AYP, and what improvements are necessary.

Reports Reveal Behavioral Intervention Opportunities

In another innovative application, several schools print out bar code labels for each student, and then use them for a variety of student tracking requirements.

“Using Hyperion SQR, we have written a couple of reports that let us produce the bar code labels,” Chasser confirmed. “Now teachers can go into the School Reports menu on the Web portal, choose Bar Code Label, and print out a sheet of Avery labels for each child. At many schools, teachers use bar code labels to inform the office of absent students. The teacher pulls the student’s bar code label, places it on the attendance sheet, and sends it to the office, where it’s scanned into the system. Clerks are no longer entering absentee information in the database.”

Once the office enters attendance data into the warehouse, the principal or other authorized administrator runs a report that instantly details all absences for a particular day. The system sends all absence information through Hyperion Job Scheduler each night to the Web site of a company that calls parents and advises them of their child’s absence from school. Should intervention be necessary, guidance counselors can schedule appropriate action using Virtual Counselor.

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The district uses Web-based dashboards throughout its schools. One monitors discipline referrals.

“Our special investigative unit works with principals to track discipline problems in the schools,” Chasser explained. “The interactive dashboards deliver details down to the student level with just a few simple clicks. Before we had Oracle’s Hyperion applications, this wasn’t possible. Hyperion ties everything together for us.”

Biggest Benefits are Intangible

Though tangible benefits are difficult to enumerate in a public school district, Chasser noted one exception—a savings to the district of more than US\$105,000 in printing costs.

“By making the reports available on the Web, we are saving the money we used to spend on specialized paper and on gas for the trucks we drove to deliver hard-copy reports to every school,” she said. “With the savings in our technology budget, we were able to provide each school with a printer, in the event they still need hard copies of a report.”

In addition, the district completes most testing reports in-house at a considerable savings.

Chasser added that the district now tracks all maintenance work daily using Hyperion reports that compare estimated to actual costs and time. This gives Broward's maintenance department a better picture of how money is spent and ensures that the department efficiently schedules and prioritizes work orders.

Moreover, Broward streamlined school improvement planning. School teams make plans based on data, then use data to evaluate outcomes in reading, writing, and mathematics. The district also enjoys still more dollar savings, as the data warehouse and Hyperion reporting system have replaced old, manual, labor-intensive methods for tracking and reporting data. Ultimately, Chasser said, it is all about providing the best possible learning environment for students.

"How do you measure the importance of using data, information, and reports to improve education and student performance? What's the value of a young adult who finishes high school and gets a job, or continues his or her education and receives vocational training, instead of ending up on the street?" Chasser asked. "Our data warehouse and Hyperion Business Intelligence Platform give teachers, school administrators, and other district personnel the ability to understand the potential of every student, tailor educational pathways, and engage in more meaningful dialogue with students and their families."

Why Oracle?

Broward County Public Schools chose Oracle's Hyperion solution for its business intelligence reporting capabilities. Its independence from proprietary language made it a 'quick learn' for the data warehouse team, as the software relies on SQL and JavaScript, both which were known in-house. In addition, customization could be done with standard software languages.

Broward County Public Schools is the sixth largest school district in the United States. The county's 281 schools are home to more than 276,200 pre-kindergarten through 12th grade students, 50,000 adult education students, and more than 41,000 employees. Broward serves students born in 225 countries, speaking 155 different native languages