An Oracle White Paper
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Using Technology and the American Recovery and Reinvestment Act to Transform Education
Introduction

While campaigning for President, Barack Obama promised that if elected he would make education a national priority. On February 17, 2009 he kept his promise and greatly expanded the role the federal government will play in elementary, secondary and higher education by signing into law the American Recovery and Reinvestment Act (ARRA). This economic-stimulus package offers school districts, education consortia and state departments of education a historic opportunity to transform teaching and learning but the ARRA also presents several significant challenges, including how to make the best use of these one-time funds and how to cost-effectively meet significant new accountability and transparency requirements.

This white paper is intended to serve as a guide for K-12 school districts in how they can use technology to significantly improve effectiveness and efficiency in measuring performance through increased transparency and access to information.
"The first step toward real and lasting reform that will ensure our students’ competitiveness begins with absolute transparency and accountability in how we invest our dollars, educate our children, evaluate our teachers, and measure our success. We must be much more open and honest about what works in the classroom and what doesn’t."

Arne Duncan, Secretary of Education

Accountability and the Role of Data Systems

While education leaders have spoken for years about the potential for business intelligence to inform teaching and learning, Business Intelligence (BI) has primarily been the domain of IT staff and analysts. With its focus on accountability and funding for data systems, the ARRA encourages States and districts to expand their business intelligence capabilities to the entire organization and include personalized dashboards tied to key performance measures and real-time information for use by principals, teachers, parents and the public. With the direction to develop or expand the capacity to collect and use data to improve teaching and learning, the Department of Education is asking education organizations to move beyond static, paper-based or PDF reports to allow teachers, principals and other stakeholders to fully engage in their own analysis of data. Education organizations must consider how best to deploy enterprise-wide data systems that are intuitive and accessible to everyone while still ensuring the information delivered is reliable and secure.

Reporting and Data Integration Requirements

Enterprise-wide business intelligence also means that education leaders are being asked to measure more than just student performance and take a serious look at teacher and principal effectiveness as well as the effectiveness and efficiency of their business operations. While the Recovery Act encourages the development of “longitudinal data systems” at the state and local level related to all indicators that impact student performance and teacher effectiveness.

Secretary of Education Arne Duncan, during his announcement of on April 1 of the $44M in initial Recovery Act funding for education, explained that this funding was contingent upon states and local education agencies’ commitment to collect, publish, analyze and act on data they collect regarding the quality of classroom teachers, annual student improvements, college readiness, the effectiveness of state standards and assessments, progress on removing charter caps, interventions in turning around underperforming schools and improvements in teacher effectiveness. The guidance from USED is that districts and states gather information to improve student learning, teacher performance, and track how funds are spent through enhanced data systems. State Departments of Education are specifically required to report on:

- The organization’s use of funds and how funds were distributed
• The number of jobs saved or created
• Tax increases averted
• Progress to reduce inequalities in the distribution of highly qualified teachers
• Progress to implement a state longitudinal data system
• Progress to develop a valid and reliable assessment for limited English-proficient students and students with disabilities
• The avoidance of higher education tuition and fee increases
• The extent to which higher education institutions maintain enrollment of in-state students
• A description of each modernization, renovation and repair project funded and its cost

These new reporting and transparency requirements will require schools and states to integrate and pull information from various systems including student information systems, human resources systems, financial systems, and project and grants management systems. While many education organizations are considering the use of a SIF (Schools Interoperability Framework) architecture to support the integration of soloed systems, they are challenged with how to address the integration of non-SIF compliant or legacy applications and data sources. A Service Oriented Architecture that allows for integration of SIF compliant as well as non-SIF compliant applications may be the best option, especially for larger school districts and state departments of education.

When building an enterprise-wide data system, education organizations should consider these best practices:

• Executive commitment to this on-going project is key to its success. The development and continuous improvement of the data system must be viewed as a critical organizational asset necessary for tracking and improving performance.

• Ownership of the data and project must belong to the departments that most need the data and not IT. Establishing data governance policies and procedures is critical to ensuring data validity and reliability.

• End-users including teachers, principals, HR and Finance personnel must be included in the design, development and improvement of the data system to ensure the system meets their needs and is fully utilized. User ambassadors can encourage colleagues to begin using BI and will drive widespread adoption.

• On-going professional development in the effective use of data will ensure that this investment is fully and appropriately utilized.
• Utilization of a metadata repository and common information model will lower costs, increase accuracy of data and allow for greatly flexibility in response to changing local, state and federal reporting requirements.

• Selecting an enterprise-wide BI suite rather than supporting multiple BI tools will minimize user training and support costs and ensure greater data validity.

• Moving towards a standards-based, service-oriented architecture will allow for greater operational efficiency and flexibility through the use of adaptable and re-usable business processes.

• Architecting for growth and for the sharing of data among state and local agencies will ensure the enterprise data system meets organizational needs now and in the future.

Customer Examples of Successful Enterprise-wide Data Systems

Below are just a few examples of Oracle K-12 education customers who have been successful in building enterprise-wide data systems to enable efficient and effective transparency and reporting while enhancing learning and transforming education in their districts.

The Los Angeles Unified School District

The Los Angeles Unified School District’s Decision Support System has been in production for more than 7 years and has helped to foster a data-driven culture focused on accountability and continuous improvement. Recently, LAUSD adopted an enterprise-wide BI suite as their standard reporting and analysis tool, replacing four other BI tools, and are now able to reduce IT support costs while offering teachers and principals personalized dashboards and allow them to create their own custom reports without having to wait for IT to build them.

The Tennessee Department of Education

Before implementing their new Longitudinal Data System, the Tennessee Department of Education was challenged to collect data from the 136 school districts and 1,700 schools to meet federal reporting requirements. Even then, the reports they provided back to the school districts were not very useful or timely. By following best practices in the development of their longitudinal data system – including securing executive sponsorship, establishing a strong data governance model, actively engaging the school districts, and leveraging standards-based technology and a service-oriented architecture – TN DoED is now able to provide teachers and principals with timely and useful student trending data around graduation rate, attendance, completion and drop outs. Through this process they were also able to dramatically improve productivity, reduce complexity, and meet reporting requirements for several Federal regulations.
The Ohio Department of Education

The Ohio Department of Education’s Data Driven Decisions for Academic Achievement (D3A2) project is an example of how a state-wide data warehouse can go beyond federal reporting to truly impact teaching and learning. D3A2 also represents an example of how use of a common reporting framework, standards-based technology and the employment of best practices can ensure that a large data project can be completed on-time and on-budget and exceed expectations. D3A2 provides Ohio teachers with access to valuable performance data and aligns educational content to help them meet the needs of individual students. The site also provides educators with a collaborative environment where they can align student needs with lesson plans and professional development created by master teachers.

Identity Management: Securing Student and Staff Data

Expanding access to critical student, teacher, and financial data to all education stakeholders provides everyone with the ability to collaborate and improve our children’s opportunities for success. However, providing access to potentially sensitive data through district-wide data systems and public-facing portals also provides opportunities for identity theft and misuse of private information and public funds. Education organizations must consider how to be “transparent” and allow for collaboration while meeting the data security requirements of FERPA (Family Educational Rights and Privacy Act) and HIPPA (Health Insurance Portability and Accountability Act).

States and districts should consider how to effectively use technology to better manage access to data. An enterprise-wide identity management strategy can significantly reduce IT costs by automating the provisioning of user accounts, reducing help desk calls, streamlining compliance audit and reporting, consolidating identity silos, allowing for easier and cleaner integration of data from various systems – while ensuring the security of sensitive information.

Douglas County School District

The Douglas County School District in Castle Rock, Colorado offers a model for the effective use of Identity Management. As one of the fastest growing school districts in the U.S., Douglas County School District (DCSD) in Colorado was challenged with providing a growing number of teachers and students with access to Web-based applications while maintaining the security of personal information. Through the implementation of an enterprise-wide Identity Management system, DCSD has saved $1 million in their first year and estimates a cost savings of $5 million over five years through the automation of account provisioning, single sign-on and password reset. In addition, DCSD was able to dramatically improve their ability to secure personal student and staff data.
“It’s time to start rewarding good teachers and stop making excuses for bad ones.”

Barack Obama, President of the United States

Improving Teacher and Principal Quality and Compensation

A major focus of President Obama’s education policy and ARRA funding is the recruitment, preparation and compensation of teachers and principals – especially in high need schools. With this greater focus on talent management in K-12 education, human resources has the opportunity to evolve from a transactional department to a strategic part of the K-12 district organization. Changing workforce demographics, increased competition from charter, private and wealthier school systems, and the adoption of collaborative technology tools – especially among younger employees – means that districts must consider the implementation of web-based human capital management systems that integrates core HR transactional functionality through self-service automation and includes integrated talent and compensation management solutions. The stringent transparency requirements of ARRA also require coupling HR transactions with analysis and reporting. In considering the replacement of legacy human resources and payroll applications or the enhancement of a current ERP system, districts, consortia and states should consider applications that address these requirements:

- Enterprise-wide talent management capabilities that allow organizations to identify specific organizational requirements and link them to specific job competencies tied to employee performance, compensation, and professional development;
- HR dashboards that allow HR personnel, district administrators and principals to track performance against HR goals including highly qualified teacher compliance and recruitment goals as well as anticipate personnel shortages.
- Pre-built key performance indicators and decision-support tools that allow the Human Resources department to link their activities to organizational objectives and easily manage their performance against these objectives;
- Performance management capabilities that allow supervisors to identify, observe, and reward performance as well as implement appropriate professional development to ensure career growth;
- Easy to use, intuitive interface that allows for broad adoption of self-service human resources functions from recruitment to professional development to pay and benefits administration in order to reduce paperwork and operational costs while improving productivity;
"Under the law passed by Congress, the top priority for these dollars is to do right by our schools and our kids. If states play games with these funds, the second round of stabilization funds could be in jeopardy and they could eliminate their state from competitive grant money. This money must be spent in the best interests of children."

Arne Duncan, Secretary of Education

- Use of workflow throughout the human capital management process to ensure appropriate approval and management of expenses, overtime, absences, and performance management with built-in security and audit capabilities;
- Ability to integrate with other applications including student information systems and teacher certification systems through the use of standards-based technology.

**Prince Georges county Public Schools**

Prince Georges County Public Schools (PGCPS) in Maryland offers an example of how a large school system was able to significantly increase in the percentage of classes taught by “highly qualified” teachers and improve teacher equity in high needs schools. Following the implementation of a fully integrated Human Capital Management and Financial system, PGCPS was able to improve their percentage of highly qualified teachers from 48.6 percent in the 2003-2004 school year to 66.3 percent in 2006-2007. Their integrated ERP system has allowed them to significantly improve teacher tracking, reporting and recruiting efforts and compete more effectively for quality teachers with wealthier neighboring school systems. In addition PGCPS has improved their operational efficiency though the use of self-service HR capabilities that allow teachers to manage their HR information and absences on-line. To improve access to information district-wide, PGCPS has also implemented a service-oriented architecture that allows for the integration of information with their new Student Information System (SIS) and legacy SIS system, as well as integration with their ERP system and user authentication system. By leveraging a service-oriented architecture and standards-based technology, PGCPS was able to migrate information to its new student system with less risk while improving access to information and reducing IT costs.

**Transparency and Financial Reporting**

Implementing the American Recovery and Reinvestment Act places substantial new demands on state departments of education and local education agencies especially with regard to the receiving, tracking, distributing and reporting the use of funds.

While states and school systems may consider short-term, tactical solutions to meet the immediate transparency and accountability requirements, they should assume the focus on
transparency in government will not disappear after the ARRA funds are spent and should consider the development of a sustainable long term reporting solution. Any long-term transparency solution should consider:

- Data resides in multiple sources such as applications, data repositories and paper records.
- A central data repository must support not only basic reporting and transparency needs but support program accountability requirements as well.
- States will need multiple vehicles to populate data from local education agencies in the repository such as direct entry, spreadsheet entry, flat file upload or direct data interchange.
- States and districts must provide easy access to information on how ARRA funds are spent and the results of this funding and should consider BI solutions that support various reporting methods such as dashboard displays with drill down, predictive modeling and geographic representation.
- A solution needs to be rapidly deployed but still serve as the basis for future expansion and the organization’s strategic needs.

State and local education agencies may also want to consider the acquisition or enhancement of an integrated financial, procurement, project and grants management application to ensure that ARRA funds are managed cost-effectively, leverage self-service and workflow technology, and allow for easy tracking of how funds are spent, by whom and for what in accordance with federal and state and local requirements.

For more information on ARRA and specific funding allocations for your education organization, please visit www.ed.gov or www.recovery.gov.

**Conclusion**

The role and use of information technology solutions will be critical to achieving the goals of effective investing and execution, accountability of funds and most importantly the transparency and measurement of performance.

As a technology leader, Oracle provides the broadest array of business application and technology solutions. By providing both, Oracle lowers the risk of integration and provides continual process upgrades and improvement of technology best practices.

Oracle continues to be a leader in assisting education customers in delivering learning in the most effective and efficient manner. Oracle renews its commitment to education by assisting you in achieving the goals of the American Recovery and Reinvestment Act of 2009.
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Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200
oracle.com

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