

WA Department of Education and Training Rolls Out Statewide Digital Learning to 800 Schools



Western Australian Department of
Education and Training
Perth, Australia
www.det.wa.edu.au

Industry:

Education & Research

Employees:

30,000

Oracle Products & Services:

Oracle Database
Oracle Real Application Clusters
Oracle Application Server
Oracle Fusion Middleware
Oracle Collaboration Suite
Oracle Portal
Oracle Financials
PeopleSoft Enterprise Human
Capital Management

Implementor:

Oracle Consulting

“When selecting products to support the e-learning project, we wanted to go with a tier one vendor that had the skills and technology to support us. Oracle’s functional capabilities also gave it an edge over its competitors when delivering enterprise resource planning functionality such as financials.” – Bevan Doyle, Chief Information Officer, Western Australian Department of Education and Training

The Western Australian Department of Education and Training (WA DET) delivers education and skills development to people in the state. The organization administers 800 schools across 2.5 million kilometers in mainland Western Australia and the Christmas and Cocos Islands.

Several years ago, WA DET developed a comprehensive e-learning strategy to transform education for students from kindergarten to Year 12 (K12), the final year of high school. This dovetailed with multiple projects to enhance the efficiency and cost-effectiveness of its internal systems. The e-learning project aims to increase education options across the board and reduce the disparity between remote areas and metropolitan Perth, the state’s capital city.

WA DET identified the internet as the mechanism to deliver a rich curriculum to all students, and ensure they could access niche subjects. The project enables teachers to use portal technologies to carry out critical tasks such as creating lesson plans and assigning learning activities to groups of students. The organization turned to Oracle to deliver the core software and solutions to support the e-learning project as well as internal re-engineering programs. WA DET has consistently selected Oracle products based on functionality and value when evaluating products from rival vendors.

“When selecting products to support the e-learning project, we wanted to go with a tier one vendor that had the skills and technology to support us,” said Bevan Doyle, chief information officer of WA DET. “Oracle’s functional capabilities also gave it

Key Benefits:

- Ensured students and teachers could access the latest learning and professional development materials regardless of location
- Delivered a robust, flexible, scalable environment that can support demand from a large, highly distributed organization
- Reduced incorrect payments to A\$50,000 across an organization with an annual budget of A\$3.5 billion
- Delivered a single source of truth for staff details across the organization
- Centralized administration ensures teachers can focus on core competencies
- Ensured teaching and learning keeps pace with the demands of the digital generation

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E-Learning Key to 21st Century Education

WA DET administers education across a region roughly one-third of the Australian land mass. This vast geography presents the department with a range of challenges, including building the skills of teachers at schools in remote areas of the state.

“We have one school in the Pilbara where the nearest town is more than 650 kilometers away,” said Doyle. “The teachers there have to spend a lot of time traveling for face-to-face professional development, forcing the cancellation of classes. Otherwise they are forced to remain in school without the benefit of these opportunities.”

This problem is exacerbated by a chronic shortage of skilled teachers across the state.

“It is difficult, for example, to get science and technology teachers to work in distant places like Port Hedland when demand is also high in places like Perth,” said Doyle.

These difficulties, combined with archaic school organizational structures and learning models that had not kept pace with students’ embrace of new technologies, prompted WA DET to undertake a far-reaching transformation of education in the state.

“We currently have 800 schools making a lot of decisions in isolation, leading to islands of excellence but a lot of duplication,” said Doyle. “Apart from equity across the state, we want to centralize where appropriate using the Web.”

The challenge was how to deliver education to a generation to whom electronic messaging, virtualization, and shared presence is second nature. WA DET turned to an online teaching and learning model supported by Oracle collaboration and portal technologies to bring K12 education into the 21st century.

360-Degree Learning

WA DET and Oracle are collaborating on the development of Learning 360 (L360), an initiative driven by the rate of change in the way students learn and interact using technology.

“Despite this change, we are still bound to the traditional school structure of principal, deputy principal, and teachers who deliver lessons using a white or blackboard,” said Doyle. “However,

change is happening so fast that people who use e-mail are seen as geriatrics.

“ICT is providing a significant point of difference in the way children live and make changes. If only two students in a school in Perth wanted to learn Mandarin, we could not justify allocating teaching resources to enable them to do so. But if we can get a virtual class together across several schools, then it becomes a different proposition.”

WA DET initially released a series of requests for proposal that, rather than being heavily based on functional specifications, sought responses from vendors that could collaborate and help the department achieve its vision.

“The K12 demographic is generally poorly served by ICT,” said Doyle. “While there are a lot of products and solutions targeting the tertiary market, there was very little we could take off the shelf for four-to 17-year-olds.”

Oracle responded first and most comprehensively with a solution that could meet WA DET’s needs and reflected the department’s direction. The Oracle L360 solution is the starting point for a project to ensure the classroom becomes a much more open environment and consequently a more engaging world for students.

The solution incorporates establishment of an Oracle Center of Excellence in Perth that provides development resources for the core application. The Center of Excellence group meets regularly with WA DET curriculum experts to ensure the project continues to provide the greatest benefit to the state’s teachers and students. The L360 solution itself utilizes software from the existing Oracle technology stack, including Oracle Database, Oracle Fusion Middleware, Oracle Content Database, Oracle E-Business Suite, and Oracle Collaboration Suite, as well as custom-developed applications, to deliver the online teaching and learning program.

The solution enables teachers in public schools to: create lesson plans online; collaborate with other teachers, curriculum experts and parents; access classroom teaching resources, including video and audio clips; assign learning activities to groups of students; monitor student performance; help students connect with other students in remote locations; and undertake further professional development online.

“The solution is already at its second release, and we expect it to be continually enhanced to keep pace with the need to maintain world-class online teaching and learning,” said Doyle. The second release has seen a trial upgraded from 17 to 54 schools.

“The point is to give students the ability to interact anywhere, anytime... we want to open the door to the use of technology in every subsequent class curriculum,” said Doyle.

E-mail Standardization to Slash Costs

Government schools have, until recently, used a range of e-mail systems, including Microsoft Outlook Exchange, Hotmail, and Gmail, that are administered in isolation from each other and the WA DET head office. This duplication created inefficiency and prevented WA DET from reaping the benefits of centralized administration.

“We would like to be able to distribute to every teacher and administration staff member across the state e-mail messages from the Director General of Education that include both voice and video,” said Doyle.

WA DET is currently deploying an e-mail and calendaring system based on Oracle Collaboration Suite that will deliver a standardized environment across the 800 schools in the state.

The system will enable WA DET to centrally manage e-mail, electronic documents, instant messages, voicemail, faxes, and Web conferences. This ensures the department complies with its own policies and broader regulatory requirements. A single repository ensures WA DET can efficiently audit, retain, and archive content, enabling the department to respond quickly to new regulations affecting both its people and operations.

WA DET started rolling out the e-mail and calendaring system in May 2006 and had linked about 150,000 users in 329 schools by September 2007. The system is expected to be rolled out to the remaining 471 schools by December 2008.

Financials System Slashes the Number of Incorrect Payments

WA DET has deployed Oracle Financials and Oracle’s PeopleSoft human resources (HR) applications to deliver key elements of its enterprise resource planning systems.

The department currently uses the Oracle Financials system to manage its central accounting system. This includes general ledger, accounts payable, and accounts receivable. WA DET is also utilizing the self-service components of Oracle iProcurement and Oracle iExpenses across all schools and districts to ensure employees can requisition items quickly and efficiently without disrupting policy set from a central location.

The effectiveness of Oracle Financials was demonstrated during a recent audit conducted by a third party consultancy. Despite being motivated by a contracted share of duplicated or overpaid funds, the consultancy was only able to locate about A\$50,000 worth of incorrect payments in an organization with an annual budget of A\$3.5 billion. This result, driven by a combination of systems and business processes, included a zero percent error rate in Goods and Services Tax (GST) calculation.

Streamlined HR Management

PeopleSoft HR enables WA DET to track employee remuneration and leave entitlements, comply with regulatory requirements, and identify and manage employee talent across its 55,000-strong workforce.

Data stored on DET employees in the PeopleSoft application is viewed as the “single source of truth” about staff, with self-service and account access and provisioning managed using this information. Access is dynamically managed within the application, with staff given a single sign-on to services delivered via the Oracle portal.

The application has enabled WA DET to realize sizeable cost reductions in the management and deployment of services to schools across the state.

“We will continue to use Oracle technology as we now have a highly integrated environment without too many players,” said Doyle.

Grid Environment Supports Change

WA DET deployed Oracle grid and clustering technology when upgrading its PeopleSoft human resources system. From there the environment was extended across all applications, including the portal, and the collaboration, online teaching, and learning systems.

“They all needed the support of a horizontal scaling model that could be delivered by Oracle Real Application Clusters (RAC),” said Doyle.

The department used Oracle RAC to join multiple servers in clusters and installed a virtualized environment to ensure improved redundancy, scalability, and reliability. The environment enables 25,000 teachers and around 15,000 administrative staff to access applications based on their level of authorization.

“We have deployed clustering through the application layer in the mid-tier across multiple devices, and installed multiple instances of the database across multiple servers,” said Doyle.

The 150,000 e-mail users are hosted on two four-way servers, with five four-way servers in the mid-tier that support the collaboration system and portal rollout. The database can easily be scaled up to eight servers.

“We will monitor performance, but as it grows we can easily add additional CPUs thanks to Oracle RAC,” said Doyle.

The environment has remained extremely stable with only a couple of instances of unplanned downtime early in its existence.

Why Oracle?

Rigorous public sector evaluation procedures meant Oracle products and solutions were put through their paces against competitors each time a request for proposal was issued.

In most cases, Oracle outstripped its rivals in functional capability and alignment with WA DET’s strategic plans.

A typical example was the evaluation of PeopleSoft human resources management software against equivalent offerings from competitors such as SAP.

“PeopleSoft was a better functional match for us than its competitors,” said Doyle. “The breeding ground for PeopleSoft was human resources and payroll, whereas SAP moved into ERP from a supply chain and accounting background.”

Implementation Process

WA DET has adopted a phased approach to implementation of its Oracle-based information technology infrastructure and delivery

of online services. The department turned to the PRINCE2 (Projects in Controlled Environments) methodology to deliver elements of the overall project under four main programs of work. The early programs dealt with infrastructure and telecommunications replacement and are sufficiently advanced that to date, 80% of Western Australian schools have a 10Mb broadband connection. This has enabled schools to access information and teaching resources from a range of sources. Schools are currently downloading more than 13TB of data per month from the Internet alone.

With centralized infrastructure and technology ensuring online services are available 24x7, schools are now relieved of the task of delivering ICT help desk support. This enables staff to focus on their core capabilities of teaching.

Later programs run by WA DET have focused on the delivery of online services and the online learning agenda.

“These programs have been delivered using the expertise of Oracle Consulting, with departmental information technology and curriculum staff directing the work in schools,” said Doyle. “The schools participating in the program were selected based on socio-economic status, technical readiness, staff preparedness, and eagerness to get involved.”

WA DET plans to ensure each one of the 800 schools in the state has access to the new online teaching and learning environment by 2012.

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