

Quarterly Performance Review of the Arizona Education Learning and Assessment System: AELAS

Submitted to the Arizona Department of Education and the
Arizona Department of Administration by WestEd and
CELT

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EXECUTIVE SUMMARY

This report documents a quarterly performance review of the Arizona Education Learning and Assessment System (AELAS) by an independent evaluator as required by *Arizona Revised Statutes (ARS)* 15-249. WestEd and CELT were hired by the Arizona Department of Education (ADE) to serve as that independent evaluator. The quarterly monitoring is a follow-up to the performance review conducted in 2013, with a report submitted on September 9, 2013.

The ADE continues to make progress in effectively addressing the recommendations in the September 9, 2013 report. The ADE team has created a management and reporting plan per the WestEd/CELT recommendations and has prioritized the recommendations according to their urgency and impact upon the effective planning and deployment of AELAS. Significant progress is being made in the appropriate recommendation areas.

The vision of timely data to teachers for use in guiding instruction and the use of this same type of timely data to reduce the local education agencies (LEAs) burden of state reporting remain the right things to pursue. This vision was the result of dozens of interviews with district staff and leadership. Ongoing interviews need to be done on a recurring basis (and repeated soon), per the recommendations in the first report, to ensure that ADE remains directed by the voice of the customer.

When ADE began this AELAS work, they borrowed ideas, documentation and systems from other states to reduce costs. Now, ADE supplies these types of intellectual property (IP) to states and is establishing itself as a leader among education agencies in this arena of serving districts with technical and data capability. ADE is now a supplier of shareable IP to such states as Michigan, Wisconsin, Maine, and Rhode Island. Thus, AELAS will soon be seen as a model for real-time data systems that other states can emulate.

The FY15 budget continues the maturation of AELAS from a financial and reporting system into an instructional improvement system in line with the original AELAS business case. Communication, planning and program support efforts have been significantly improved since the last monitoring report, though they remain an area that requires continuous monitoring for effectiveness.

As with most projects of this breath the AELAS team is managing technical and non-technical challenges. Technical issues are primarily due to delays in the completion of Ed-Fi specifications and data loading structures necessary for the efficient and frequent transmission of high quality data from districts to the ADE. There are important functionalities in the instructional improvement system (IIS) components of AELAS that are not ready for district implementation. Non-technical issues include: educator leadership in the use of data to drive instruction, system sustainability across leadership transitions (e.g. new Superintendent), a dependence upon SIS vendors to implement Ed-Fi, prioritization by instructional leaders to integrate AELAS information capabilities into their work activities, and proactive leadership by instructional experts such as program directors on AELAS deployment activities. Plans to include digital content and assessments aligned to state standards are not progressing as planned. Though the ADE is proactively managing these issues the lack of timely data, digital content, and assessments delays AELAS from positively impacting student learning and instruction as originally envisioned.

The ADE IT group has become a service organization to the districts with the deployment of the SIS Opt-in project. The student information system (SIS) is a foundational information system for

the daily operation of a district. Therefore district expectations for system performance will be higher than traditional SEA functions. ADE will undergo organizational change with the upcoming leadership transition after the State Superintendent of Public Instruction election. The impact to AELAS is unknown. It is imperative the ADE have a definitive long-term plan on how they will provide high quality service and up-time to this operational system that is built upon a stable governance structure.

AELAS continues to be an IT lead effort. With dashboards now available the program areas should be leading development of data literacy skills of the district staff and the application of dashboard information to instructional improvement and school support activities. As AELAS functionality increases the ADE and LEA teams must increase their data literacy and the associated application of data to instructional and school improvement activities to effectively utilize AELAS capabilities to improve student outcomes.

ADE has put in place increasingly sophisticated and important project monitoring tools for examining budgetary burn rates and expenditures, as well as project planning. These efforts address a foundational project issue the review team identified in the original evaluation.

Governance structures, within which program leadership and functional domain leaders own AELAS processes, are maturing, but are lagging in their maturity in comparison to system capabilities. Governance maturity efforts will need to be accelerated as AELAS capabilities increase into instructional improvement and organizational transitions take place in early 2015.

Overall the ADE team continues to effectively address the original recommendations, building an operational information system that serves Arizona districts and the ADE.

COMMENDATIONS

Commendations pertain to activities that ADE is doing especially well and are highlighted as examples of superlative performance. The WestEd/CELT team has noted the following commendations from observations during the September 2014 site visit.

1. The ADE continues to pursue best practices and continuous improvement in operations in areas such as enterprise architecture, project management, application development and cost management. Impressive progress continues to be made in these areas.
2. The ADE has developed an impressive cost tracking and budget to actual reporting system, per the recommendations in the first report. They are working to improve a better scope projection process to be able to show percent spent matched to percent complete.
3. An impressive Network Operations Center (NOC) has been created with metrics designed around the Information Technology Infrastructure Library (ITIL) processes. The NOC combines server and network monitoring with application performance.
4. The ADE has developed a more comprehensive AELAS project schedule and timeline, per the recommendations in the first report. This is part of a project support office that is bringing additional structure and discipline to the ADE IT projects.
5. The ADE IT group has experienced significant growth from about 20 employees and 40 contractors to about 50 employees and 130 contractors. To effectively manage this larger group (and associated costs) they have recently implemented a new organization structure.
6. ADE is becoming a service provider of software products to districts and regional support agencies, offering: ADE Connect, AzEDS, IIS, SIS, AZDash. This is a leading-edge concept for a state agency, and could pave the way to funding a non-profit to support AELAS long term.
7. An employee incentive plan has been implemented, aligning strategic plan goals to individual performance plans. This plan appears to be driving AELAS work, particularly across the IT and non-IT areas.
8. Arizona School Computer User's Group (ASCUS) appears to be a strong supporter of the ADE IT group. During the September ASCUS meeting the group was very positive toward Mark Masterson (and team) and provided positive feedback upon the work completed by and their relationship with the ADE IT team.
9. The ADE has deployed a Microsoft Dynamics based Customer Relationship Management (CRM) system. Their vision for the use of the CRM as a consolidated source of information to support districts is a best practice in other industry segments.
10. There appears to be more outreach to and engagement by educational leaders within ADE. This is an area of continuing importance as they will be a key set of users and an advisory group. AELAS staff should continue to facilitate and build engagement opportunities throughout the Department.
11. ADE is taking seriously the concept of data literacy that has risen above mere rhetoric. For example, the teacher licensure office has developed a set of standards and measurement rubrics for teacher preparation programs, in collaboration and consultation with the schools

of education. Senior leadership at ADE is aware of and is communicating the importance of data literacy within the Department and to the LEAs and other stakeholders.

12. The ADE leadership team has developed a strategic plan with measureable outcomes and distributed those goals down to individual performance management efforts.

CURRENT PERIOD EVALUATION

FINDINGS BY RECOMMENDATION

The 10 initial recommendations served as the baseline from which the WestEd/CELT team worked during the site visit and the off-site monitoring. Below is a synthesis of the team's findings as they pertain to each recommendation.

1. Stay the course as envisioned in the AELAS business case.

Progress Made

- The FY15 budget request contains a number of projects that will increase AELAS teacher, leader and student functionality in alignment with the originally envisioned system. The planned functionality includes: content management, learning management and teacher observation

Suggestions/Concerns

- The Content Management System (CMS) is not yet designed for district use (lacks multi-tenancy, work flow, scope and sequence and curriculum mapping). This will be remedied with time, but this delays the value proposition to the classroom teacher.
- Tucson wishes to pilot the CMS. They will make an excellent design and test partner.
- The assessment engine strategy is in flux. The AELAS steering committee is evaluating assessment system options.
- The learning management system is functional for internal users but currently lacks the ability to manage user registrations, hindering its ability to be used by districts.

- The SAIS replacement project appears to be ready to begin calculating SCF payments within a stable operating environment. Districts are supportive of AELAS projects, particularly on the SAIS replacement project and SIS Opt-in projects. At the September 2014 ASCUS meeting a rural district superintendent commented *“you should have done this twenty years ago”* in response to state SIS Opt-In plans (Roger Studley, Bowie Unified School District #14).
- 1. Organization Entity Management System (OEMS) is the foundation for modernizing the department’s applications. This work is progressing as planned and must finish as scheduled this fiscal year so the ADE can begin the conversion of the twenty-one software applications that rely on the current system of independent and unsynchronized entity databases.
- Student Information System (SIS) vendor implementation efforts are a source of delay for AELAS. An example is the two SIS vendors who did not deploy the ADEConnect plug-in on the timeline originally developed by the ADE and the associated negative impact on the ADEConnect deployment and associated deployment of AZDash. Another example is the fact that SIS vendors must develop and install the REST API code into district systems for the new data submission scheme to function. ADE lacks formal authority to force SIS vendors to deploy the REST API and is dependent upon this work to implement frequent data loads necessary to support the original AELAS vision. The ADE team appears to be aggressively managing vendor capabilities needed for AELAS, but stakeholders should be aware of the vendor dependencies within the implementation the AELAS plan.

2. Utilize business architecture concepts, aligning department strategic plans to and across programs area plans and associated execution activities and methodologies.

Progress Made

- An AELAS internal steering committee has been established, and held its second meeting during our visit. This is a good practice, but overdue.
- The program areas have experienced a large amount of turnover in leadership positions

Suggestions/Concerns

- As AELAS increases in capabilities there will be an increasing need for formalized establishment and arbitration of how instructional programs work together in a coherent manner through the standardization and integration of work processes. An example is the Content Management System (CMS) meta-tagging process. Each

and the team is just beginning to understand how they can leverage the AELAS components (such as content management) for making their work more available to the districts.

program area must agree to a common methodology and taxonomy to tag content in a manner that supports every program's work functions, and allows the association of formative assessment results to appropriate instructional resources. Another example is the existence of two state contracts for teacher observation systems (True North Logic and TeachScape). These applications should be configured as similarly as possible in how they operate and provide information to teachers and leaders to facilitate system adoption and integration into LEA and ADE work efforts.

- Instructional practices in the districts will not benefit from the ADE in leading/training them on such things as the use of content management tools to select, vet and tag digital instructional content some months, as the ADE program areas are not ready to lead this effort. This has to come together with real time data from formative assessments or the vision of AELAS will not be realized.
- The review team has not observed the instructional and program leaders taking an active role in planning how AELAS capabilities can be used to increase the effectiveness of their teams and the district and school teams they support. Program-area led opportunities such as digital instructional content need to become a priority.
- The ADE has recently begun the implementation of a strategy
- The ADE lacks an agency-wide discipline around process

office, into which such roles as process improvement, strategic planning and data governance can reside. The WestEd/CELT supports this direction.

improvement. There is no standard method for categorizing (e.g., APQC's Process Classification Framework), documenting and improving (e.g., LEAN, Six Sigma, TQM) processes outside of IT. Consequently, ownership of the AELAS business processes continues to elude the understanding of the program areas, with the possible exception of the finance department. Even in this area, there is too heavy a dependence on IT to lead them in designing processes and maintaining the process documentation. This places a risk to the financial processes when IT turnover or scope reductions occur. As a remedy, the strategy office is a good place to put the accountability for driving a process improvement methodology for the ADE.

- Development of enterprise systems (which reduce deployment and support costs) such as AELAS are hindered by silo-decision making within program areas and sometimes even grant-based initiatives that lack an understanding of the broader vision/strategy. An example provided was an assessment readiness tool that was planned outside of the enterprise architecture structure. The strategy office for the ADE could be a source for ensuring such decisions are made with a clear view of the broader vision/strategy for the department.

3. **ADE directly address the budgetary issues that pertain to AELAS, SAIS, and the SLDS that include detailed work plans, deliverables, and timelines.**

Progress Made

- The ADE has deployed an enterprise wide project management system in Microsoft Project Server with increasingly sophisticated project monitoring tools for examining budgetary burn rates and expenditures, as well as project planning. This is considered a best practice in other industry sectors. Within the project server environment the technology team can track each AELAS project and their interdependencies. The system has the capability of tracking and reporting all project costs, resources consumed, and timelines (baseline, actual and forecasted). Though the system has just been implemented it has the potential to fully address this recommendation.

Suggestions/Concerns

There are some important dates in 2016 that have not yet been projected in the system, such as the date when the old SAIS data collections can be turned off.

The team still needs to improve project forecasting of remaining work to fully track and project budget to actual.

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4. **Improve and continue to develop a communication plan to diverse stakeholders.**

Progress Made

- Communication efforts are proactive and robust. ADE efforts in this area are among the best experienced by the review team.
- Descriptions of various applications have been drafted in varying degrees of specificity,

Suggestions/Concerns

While communication is making progress it remains a critical and continuing area of focus to support AELAS adoption by instructional leaders.

- More information about the utility of the applications could be communicated particularly to the

keeping in mind the level of information that different stakeholder groups might need.

- The ADE plans to rebrand the AELAS components to make it easier for lay people to understand their function.
- ADE has branded the AELAS deployment as “Education Transformation”, a good communication action to message AELAS in a non-technical manner.
- A portal has been created to share information across the agency (the “Hub”).

LEAs.

5. **Creation of a data governance process.**

Progress Made

- There is evidence of increasing ownership of the various applications by ADE leadership. This is particularly important, given the introduction of four new assistant superintendents and their major roles in organizational and instructional leadership. These individuals and their programs will be key in assisting in the data governance process of engaging a data steward from each program.

Suggestions/Concerns

- The data governance process is behind where it could and should be. Much of the foundational work in this arena (e.g., establishing data policy, identifying the data entities and categories for the department using the CEDS structure, naming data owners and data stewards aligned to the CEDS entities and categories respectively, etc.) should be completed in order to support the AELAS development and rollout.
- Current LEA data submitted to the ADE are reported to be of poor quality (errors and inconsistencies) and though it was adequate enough to support legacy systems (with manual manipulation) it will not be sufficient to support real time data reporting requirements as needed for

6. Reduce the redundancy among data collections.

Progress Made

- ADE is acutely aware of this need and is working toward the goal of coordinated data collections. The ADE has developed a high level phased approach to consolidating data collections and the effort remains a work in progress as foundational AELAS systems (such as student data store) are completed.

Suggestions/Concerns

- The most disconcerting finding of this visit and largest potential threat to AELAS' success is the schedule delay, and uncertain go-live dates, for replacing the SAIS data collections with the Ed-Fi API structure. This will mean that the current methods of collecting data from school districts and charter schools, methods which have been very unpopular, will of necessity continue to be used for a longer and as yet indeterminate amount of time. This may have the effect of eroding confidence in the AELAS vision.

7. Creation of a non-profit organizing structure.

Progress Made

- ADE is aware of this need and is accelerating their work in this area.

Suggestions/Concerns

- With the ADE becoming a service provider to districts for SIS services it is critical that a stable operating environment/entity be created that the districts can rely upon over time. Such entities are already in place in other states in the form of regional service agencies or BOCES.

8. Improvement of human capacity around the use of data (e.g., data literacy).

Progress Made

Suggestions/Concerns

- Data literacy is gaining traction within ADE. Led by senior leadership, the licensure group is now working to develop criteria for teacher preparation programs that include an evaluative category for data literacy. This work communicates to schools of education the importance of developing human capacity for data use among future and current educators. This work must continue and be communicated as an important part of educators' skill sets.
- ADE is working with schools of education across the state on this effort.
- ADE needs to continue to find ways to improve data literacy among its internal staff as well as staff in its LEAs. This component will be essential to the effective use of AELAS as it is rolled out and implemented
- AELAS is actively producing dashboards for teachers and leaders, but the skills and knowledge of those consuming the information available via the dashboards may not be of an adequate level to use the information effectively. The IT team is currently training districts on how to access, find and utilize AZDash reports. This training should also include data literacy, not just how to use the dashboards. This is an example of an effort ADE instructional and program leaders must be responsible for and whose effectiveness must be monitored.

9. **Attend closely to the needs of the most rural districts.**

Progress Made

- The ADE is actively addressing some of these infrastructure issues with plans for a RFP out for wireless and another RFP for statewide high-speed communications network. Are there updates on these topics?

Suggestions/Concerns

Mark referenced broadband at the ASCUS meeting.

- The SIS Opt-In project is seen as a benefit by rural school districts, potentially reducing their IT costs dramatically. The ADE received positive feedback on the SIS Opt-In project. A comment made during the ASCUS meeting was "...you should have done this twenty years ago. My district will go from paying \$8,000 a year for a SIS to \$365." (Roger Studley, Superintendent of Bowie Unified School District #14).

10. Development of a comprehensive long-term plan and continued outreach to stakeholders in the form of periodic needs analyses as a process by which to monitor changing needs of the stakeholder groups.

Progress Made

- In support of this recommendation the ADE technology group has developed a comprehensive AELAS project schedule with a work break down for each project in FY15.

Suggestions/Concerns

- The vision for AELAS was the result of dozens of interviews with district staff and leadership. Ongoing interviews need to be done on a recurring basis (and repeated soon), per the recommendations in the first report, to ensure that ADE remains directed by the voice of the customer.

CHALLENGES

The WestEd/CELT team has noted some challenges that pertain to the ongoing work that are worthy of breaking out for special attention. These challenges are not to be construed as negatives, but to be taken as constructive issues that staff identified about which ADE should actively monitor and proactively manage when appropriate and feasible.

1. There is the potential for AELAS redirection or even funding reduction/elimination with the pending leadership changes next year. This has the potential to waste many millions of dollars of development work to date. It may also cause turnover among the IT staff and essential leadership. The department could find itself dependent for many years to come on the old SAIS data collection methods and unable to get off of the old servers, SQL systems and Windows XP desktops. This will create the potential for a future system failure and the inability to make funding allocations to school districts and charter schools. Mitigation of risks associated with such turnover was addressed in the first report, and should be addressed by governing groups outside of the ADE.
2. Aside from leadership changes, the most disconcerting finding of this visit is the schedule delay in replacing the SAIS data collections with the Ed-Fi API structure. Publication of the Ed-Fi REST API specifications and Operational Data Store (ODS) database schema is significantly behind schedule. But more importantly, work on the design of the data loading and validation processes has not begun yet. The design of this “middle” component (data validation and loading) to take the API data and transform and prepare it for use in the financial payment systems is behind schedule. The ADE has realized over time that this middle component is far more complex than earlier anticipated. This process is intended to leverage the “real-time” transfer of SIS data through the Ed-Fi APIs to the ADE for use in reducing the burden of state reporting and also subsequently provide this same real-time data back to the classroom teacher. This “middle-component” work has not yet started, and will not start until late December 2014. Completion is estimated to be in FY 2016. As a result, the schedule for testing, piloting and turning off the old SAIS data transfer and getting off of the old servers, SQL systems and Windows XP desktops will likely extend until the end of FY 16. This will of necessity delay the time when the current SAIS data collections will be turned off for the district and will likely erode confidence and support for AELAS. This is one key area where the comprehensive AELAS project plan and schedule is not complete. A clear plan, schedule and communication strategy needs to be established as soon as possible to manage the expectations of the districts.
3. The ADE has published a very aggressive SIS schedule. There is considerable potential for delays and extensions to this schedule. The WestEd/CELT team suggests that the ADE IT team review their timelines to ensure they include time for currently unforeseen contingencies.
4. The combination of increasing staff size and transition into a service organization is taxing the current management structures of the team. As the state SIS becomes operational and additional districts go on-line these management stresses will increase. Additionally, turnover among key staff and project managers seems to be high. Continuous attention to the well-being of the staff and staff morale is important to protect the project’s success.
5. The ADE is just beginning to implement a product support strategy, procedures and organization. Tier 2 and 3 support for the AELAS components is under development. While this is a positive development, it needs to be timed to ensure that it is operational on a timeline that matches AELAS rollouts into production.
6. The WestEd/CELT team learned that the AELAS implementation team gets some significant push back on training from the districts with the excuse that it is not a priority for district leaders and teachers. This is understandable, since at this point in the AELAS development there is no real timely student data matched to formative assessment results

that makes AELAS instructionally relevant. However, this is a red flag that indicates how important it is to have a cadre of district leadership and spokespeople that can continue to articulate the vision of timely data to the districts to prevent loss of support of AELAS.

CONCLUSION AND NEXT STEPS

The AELAS vision of supporting teachers, students, schools and districts with digital instructional materials and performance reporting is a good one. The Arizona Department of Education has matured into a group the rest of the nation looks to for leadership in technical arenas.

The ADE technology team is delivering high quality results in key areas, such as: SAIS replacement (SCF funding at this point), ADEConnect functionality, project management (MS Project Server site), and district relationships (ASCUS team members). The AELAS projects are being professionally and actively managed.

Findings, recommendations and observations on the AELAS project fall into three themes.

- First, Educational leaders in the ADE and AZ LEAs must take on a leadership in the development of AELAS instructional improvement functionality and its integration into instructional and management practices.
- Second, the efforts to collect frequent (as frequently as daily) data to support formative assessments and digital content must continue to be a high priority. This work must include communication efforts to LEAs on timelines and the associated reduction in other data submission requirements.
- Third, sustainability plans for AELAS must be developed. As the system becomes an operationally imperative tool for LEAs the state must have a plan to ensure LEAs are confident in its reliability and longevity.

Within these three themes the review team suggests the following focus areas for the next period of work:

1. Develop an AELAS sustainability plan. This can include pursuit of the recommendation in the first WestEd report regarding the creation of a non-profit for AELAS continued development and support. This places this work under the direction of a district led board and reduces the potential impact of periodic leadership changes.
2. Use Tucson School District to design and pilot the next release of the CMS.
3. Role the SIS out with a full set of vetted process diagrams as the guide for the training and documentation.
4. Implement a data literacy training plan.
5. Implement a process management program (e.g. Total Quality Management, Lean Six Sigma), potentially within the strategic management office.
6. Develop a detailed project plan for Ed-Fi REST API data validation and loading (the “middle” portion) and communicate its impact to the districts and other stakeholders.