Reform Support Network

The View from the States

A Brief on Instructional Improvement System Strategies and Approaches

August 2013

This brief provides an overview of the Instructional Improvement System (IIS) models for State education agencies in Hawaii, Kentucky, Massachusetts, North Carolina, Ohio and Rhode Island, along IIS goals in the following areas:

The IIS lead for each State prepared and then vetted preliminary data on each of these six areas during one- to two-hour meetings and phone conferences in the late fall of 2012. States provided information on how they developed and deployed IIS systems, including what IIS functions they support, why they selected certain functions and how they expect to fund their IIS systems in both the short and long term. Information was self-reported by the State IIS leads and is intended to provide insight on the current focus of their IIS efforts. In this way, States highlighted and shared information they believed would aid other States as they design and implement their own IIS. Based on those meetings, this brief offers a look at the path each State is taking, but does not attempt a comprehensive overview of policy or practice, system requirements (for example, privacy concerns) or an assessment of the quality of the initiatives.

Hawaii – IIS Scan

Beginning in the fall of 2008, Hawaii spent nearly a year clarifying a Curriculum Development/Learning Management System (CDLMS) to help support teaching and learning in the State. The State team began by hosting "awareness" sessions as vendors responded to a Request for Information. This informed the State team about current vendors and helped it determine what was possible. The State launched a committee to review and explain the vision to the field, as well as identify the functional requirements of the system. A Request for Proposals (RFP) was developed and posted in September of 2009. Hawaii purchased Global Scholar in 2010 as part of its "Data for School Improvement – DSI" initiative, which uses classroom-based, formative assessments to help plan instruction as part of the larger CDLMS vision.

What IIS functions does the State support?

IIS functions were selected to help the State implement its vision for instructional improvement and formative assessments for learning. In this effort, Hawaii's IIS supports the beginnings of curriculum management, formative assessment management, piloting of instructional management (lesson planning), grade book piloting and a professional development management system. It also includes an existing item bank (including a Hawaiian Language Immersion subset) and a daily import into the IIS from the State's Student Information System (SIS).

The operating budget of the Hawaii Department of Education includes IIS costs of between $2.5 and $3 million over five years to serve approximately

The Reform Support Network, sponsored by the U.S. Department of Education, supports the Race to the Top grantees as they implement reforms in education policy and practice, learn from each other, and build their capacity to sustain these reforms, while sharing these promising practices and lessons learned with other States attempting to implement similarly bold education reform initiatives.

180,000 students. This roughly breaks out into $2.3 million for implementation, $400,000 in training and $375,000 in recurring support costs.

Shared lessons learned from Hawaii include the following:

- Rather than implementing the IIS in pieces, roll out major components at the same time or in close succession.
- Find visionaries who want to move ahead with full functionality—and who can champion and advocate for the complete IIS model.
- Align the IIS to Common Core State Standards (CCSS) and performance-based assessments.

Table 1 provides an overview of Hawaii's IIS components

Table 1: Hawaii – IIS Components

Standards and Curriculum	• Aligned all content areas to CCSS and Hawaii Content and Performance Standards • Will start a pilot program of standards-based reporting this year • Looking to move to a single core curriculum
Instructional Practices	• Pilots lesson plans tied to grade book functionality • Trains teachers on developing lessons aligned to standards and writing good items to measure learning
Assessment and Growth	• Will move from classroom (formative) assessments to grade-level formative assessments • Hired American Institutes for Research to provide the current summative assessment
Learner Profile	• In specifications, for future rollout
Data Analysis and Reporting	• The State is analyzing classroom assessment results • It is monitoring usage of the Data for School Improvement system
Professional Development	• This is part of the vision behind the CDLMS and the State provides professional development to teachers through the IIS • Additionally, professional development and teacher effectiveness, which include teacher evaluation, are addressed through another system

Kentucky – IIS Scan

The Kentucky Department of Education (KDE) contracted with Schoolnet to support the Continuous Instructional Improvement Technology System. Kentucky's Race to the Top Local School District Scopes of Work include assurances and an action plan with budget and sustainability plans for complying with the performance measures. In fact, 171 of 174 schools submitted plans to participate. The large number of districts participating prompted the State to create a multifaceted training plan for the local educational agencies (LEAs).

What IIS functions does the State support?

Kentucky selected IIS functions that reflect the State commissioner's vision for improving instruction and would extend current statewide tools such as the SIS, Longitudinal Data System, financial system and statewide systems for individual learning planning. The IIS has the following functions:

- Manages assessments (formative and summative), instruction and professional development
- Includes portal and identity management
- Imports data daily from statewide SIS
- Includes content library and formative assessment item bank
- Provides State-supported tagging process for deconstructed CCSS
- Links standards, instructional content and assessment items
- Includes dashboards and analytics
- Manages Professional Growth and Effectiveness System delivered through the Educator Development Suite

Long-term license costs for the IIS appear in the State budget for $14 million to Schoolnet over three years.

Shared lessons learned from Kentucky include:

- Leadership is critical to the project.
- Provide multiple methods of communications and training to end users.

The IIS of KDE benefits from a large and extensive support team. This includes strong legislative and leadership support to establish and launch the project, KDE cross-office collaboration and coordination (for instance, the Instructional Technology and Information Technology Departments) and project teams for the Continuous Instructional Improvement Technology System, including Schoolnet/Pearson support. Additionally, a statewide and regional leadership support network formed for teachers, leaders, representatives from co-ops, postsecondary education and related education partners. This network consisted of 1,800–2,000 participants: about 600 English Language Arts (ELA) teachers and leaders, 600 mathematics teachers and leaders and more than 600 school and LEA leaders. Overall, this support costs about $3 million.

- Build capacity in LEAs in a self-service support model.
- Have a strategic plan that adjusts as lessons are learned; "Plan-Do-Check-Act" can guide adjustments as the project progresses.
- It matters who vendors are partnering with for loading standards, such as Globally Unique Identifiers and coding.
- To be on the same page with vendors, the correct source documents must be identified.
- The review process must be fully coordinated, timely, accurate and efficient; testing is critical.
- Coding of content standards must be understood and easy to replicate (this should not interfere with the intent of the content standards).
- Design coding of content standards and their appearance early to allow for easy alignment of additional information for long-term use.

- Cross-curricular connections exist, but are difficult to seamlessly connect electronically with standards alone (need to also have content connections with skill progressions).
- Alignment is critical for organization of curricular content and this must be user friendly and easy to navigate.
- Educators want to use the curricular materials they have already created to save time, but they must see the long-term benefit and links to data by tagging appropriately.
- Share instructional resources at all levels (e.g. State, district and school).

Table 2 provides an overview of Kentucky's IIS components

Table 2: Kentucky – IIS Components

Standards and Curriculum	• ELA and Mathematics Standards and instructional materials available statewide • Loading new Science and Career/Technical Education standards as available • Seeking to provide resources to teachers for deconstructing the new content standards; connecting the new Common Core Standards, Kentucky's Program of Studies and Core Content for Assessment; mapping the curriculum to align with the new standards; and aligning instruction vertically and horizontally across and within grade levels
Instructional Practices	• Expanding materials to include Lesson Planner, support for clickers (eInstruction, Turning Point and Promethean) • Seeking to provide a wide range of tools on instructional strategies (such as videos of highly effective lessons), interventions and student learning resources, linking new resources with the existing ones that the State's teachers already use (such as EncycloMedia, Kentucky Learning Depot, Kentucky Virtual Library, SAS Curriculum Pathways, Thinkfinity and School Improvement Network)
Assessment and Growth	• Has a formative assessment module, a test item bank (KDE purchased assessment items from Pearson; LEAs can write or vet their own items) and the ability to upload interim assessment data • Seeks to provide rich information on student learning by allowing users to build, deliver, score and report on assessments for formative and summative purposes across all relevant levels (including classroom assessments, interim benchmark assessments and annual accountability testing) • Supports assessment for learning by putting the results of these frequent assessments into the hands of teachers and students
Learner Profile	• Offers student demographic data, attendance and enrollment data, Northwest Evaluation Association's Measures of Academic Progress data, Discovery, Education Assessment, Kentucky Performance Rating for Educational Progress (K-PREP), Alternate K-PREP, Stanford 10, Educational Planning and Assessment System EXPLORE/Plan/ ACT, End of Course Assessment and American College Testing assessment results. Also the following are either in progress or planned: school and district formative assessment data, Computer-Adaptive College Placement test, Assessing Comprehension and Communication in English State-to-State for English language learners, Kentucky Occupational Skills Standards Assessment, Armed Services Vocational Aptitude Battery, WorkKeys, Industry Certifications and Kentucky Online Testing.
Data Analysis and Reporting	• Provides access to all data listed here
Professional Development	• Seeks to provide teachers and principals with electronic access to all of their individual efficacy/growth portfolios, including informal observations, self-reflections, performance tasks, scores on the rubrics and ratings categories and local evidence furnished by teachers and principals • Will allow teachers to access customized resources and professional learning opportunities that align with their portfolios and professional growth needs, including resources such as online learning courses for job-embedded professional development, custom publishing tools to support collaborative development and sharing of local content among professional learning teams and networks • Furnishes PD 360 from School Improvement Network, which provides professional development content for teachers and leaders and a single sign-on to all teacher professional development content

Massachusetts – IIS Scan

The Massachusetts Department of Elementary and Secondary Education (MAESE) collaborated with Ohio to determine "core" IIS requirements based on the Center for Educational Leadership and Technology Instructional Improvement System project funded by the Bill and Melinda Gates Foundation. Based on their shared findings, the two States issued a joint RFP. Each State aims to support teaching and learning in LEAs within its borders. MAESE anticipates that during the Race to the Top grant, at least 171 Massachusetts LEAs, with some 547,000 students, will participate in the IIS and use the State system. Other LEAs may join.

Both Ohio and Massachusetts plan to include between six and 12 of their LEAs in piloting and user acceptance testing. Student, teacher and course data for participating LEAs will be supplied to the IIS using the School Interoperability Framework (SIF) Web services. Massachusetts is in discussions concerning participation in the pilot phase of Shared Learning Collaborative (SLC) technology. The IIS will deliver and manage formative and interim assessments with additional, LEA-based, third-party assessments. The SLC technology is expected to publish para-data results to the Learning Registry. The technology and integration recommendations for delivering student assessments from the Partnership for Assessment of Readiness for College and Careers must be integrated into the IIS as they emerge.

Massachusetts has branded features of its IIS as "Edwin Teaching and Learning," with more data analysis from the State longitudinal data system branded "Edwin Analytics."

What IIS functions does the State plan?

MAESE selected IIS functions in an effort to leverage statewide SIF infrastructure, lower the risk of delivering tools to LEAs and limit long-term license cost through the SLC. The State plans the following functions:

- Access to model curriculum units (exemplars) developed by teachers and facilitated by MAESE
- Ability for LEAs to copy, use and edit model units and/or create their own units
- Assessment administration (formative and interim)
- Near real-time data imports via SIF from LEAs' SIS transmitted to the IIS via the State education agency zone integration server
- Integration with Edwin Analytics
- Single sign-on and identity management
- Portals and dashboards
- Access to a standards-aligned content library through partnership with PBS LearningMedia and other third-party publishers
- SLC technology ecosystem to help LEAs acquire more IIS functions

MAESE expects to limit long-term cost and achieve greater sustainability through economies of scale by partnering with Ohio on joint procurement (a process other States could also join), using a vendor help desk and assuming costs for LEAs beyond the grant period through legislative approval.

Massachusetts and Ohio's joint procurement process yielded the following shared lessons:

- Identify one State to take the lead on procurement.
- The "Buy" model makes more sense than "Build."
- Develop common terms and conditions for core functionality.
- Retain separate terms and conditions on State-specific requirements.

The process required additional people to reach consensus but both the requirements and the process were stronger and better as a result. Would MAESE do this again? Absolutely.

Table 3 provides an overview of Massachusetts' IIS components

Table 3: Massachusetts – IIS Components	
Standards and Curriculum	• Manages multiple sets of standards including CCSS, Career/Vocational Tech and other State and LEA standards • Provides for Model Curriculum Units for statewide distribution
Instructional Practices	• Can create units with materials, activities and resources aligned to standards • Permits the creation of lesson plans, curriculum maps or both • Tags materials based on the Learning Resource Metadata Initiative schema and MAESE extensions
Assessment and Growth	• Supports item banks for States, LEAs, schools and teachers: • Private bank for individually teacher-created items • Secure bank of items created through approval workflow process and importing for interim assessments • Public banks of released Massachusetts Comprehensive Assessment System items • Can administer and score both online and paper-based assessments
Learner Profile	• Provides a comprehensive student profile, including the following: · Teacher class rosters and class assignments · Formative and interim assessment data · Imported summative assessment results
Data Analysis and Reporting	• Will include general reporting, assessment reporting and the ability to print standards and curriculum documents • Emphasizes ability to create simple or complex assessment validity reports, including psychometric information • Follows Massachusetts-specific requirements on identifying unmet Career/Vocational Tech competencies
Professional Development	• Includes training on the Edwin Teaching and Learning tool • Will train educators on data use, in a separate MAESE project

North Carolina – IIS Scan

In January 2010, North Carolina's governor introduced a vision for education known as "Career and College: Ready, Set, Go!" The plan sought to ensure that every student in the State graduates from high school prepared for success in a career, a two- or four-year college or a technical training program. After winning a Race to the Top grant, North Carolina created and explained its vision for an IIS that expands the commitment to education reform set forth by Ready, Set, Go! The updated plan includes a data system to improve instruction and learning.

To inform the IIS RFP, the North Carolina Department of Public Instruction (NCDPI) contracted with vendors to gather specifications for the IIS. The State conducted focus groups within NCDPI and developed a model. Through a series of regional seminars, State officials shared this model, explained the vision behind it and gathered feedback from school staff on the features and functions of the system. In February of 2012, the State released the IIS RFP and was evaluating proposals as of this writing.

Areas of Focus in the NCDPI

- Sharing content with other States to leverage resources
- Providing access to technology for teachers, schools, students and parents
- Addressing sustainability policies, personnel and organization structure
- Ensuring long-term funding (recurring maintenance and license costs will require LEA support)

What IIS functions does the State support?

To improve and personalize student learning, NCDPI selected the following IIS functions:

- Curriculum, instruction, assessment development tools

- Management of professional development and educator evaluation
- Delivery, scoring and reporting of assessments
- Dashboards and analytics
- Student profiles and work samples
- Student, teacher, administrator and parent portals
- Assessment content (formative, interim, summative)
- Professional development content
- Alignment of standards to instructional content, assessments and professional development content

State officials expect these functions to improve teaching and learning by providing increased access to high-quality resources for all users and providing timely, relevant data. The 2010 to 2014 IIS budget is an estimated $25 million.

Table 4 provides an overview of North Carolina's IIS components

Table 4: North Carolina – IIS Components

Standards and Curriculum	• Includes all standards in the North Carolina Standard Course of Study (NCSCS), which includes CCSS and North Carolina Essential Standards • Manages multiple sets of standards (such as content, process skills and proficiencies) in a variety of hierarchies, terminology and structure • Tools for curriculum design, development, mapping and documenting of best practices • Designs with role-based security to allow for a workflow in which submitted materials move to a review process before joining State, regional or LEA resources
Instructional Practices	• Can both find and assign instructional interventions to students • Allows students and parents or guardians to find and use the resources for individual learning • Makes learning objects searchable by grade, subject, NCSCS standard and other search criteria supported by the Learning Resource Metadata Initiative tagging schema • Registers learning objects with the Learning Registry • Searches and retrieves instructional resources from an external Learning Object Repository
Assessment and Growth	• Can create, align, deliver and manage various levels and types of assessment items and strategies ranging from daily classroom formative assessment to LEA interim or benchmark testing, to statewide summative assessments for grades 3–8 and high school • Can report student performance against the NCSCS and suggest learning objects or other tools to help students improve their performance against individual content standards that the students have yet to master • Can assess class performance against the NCSCS and suggest to educators professional development to help the educator improve student performance against individual content standards that the class has yet to master
Learner Profile	• Offers access to student demographic data, longitudinal assessment results and other useful information when planning appropriate instruction for the student • Integrates and consolidates data from other systems of record; provides area for teachers, students or both to store work samples and other information
Data Analysis and Reporting	• Provides a student-achievement profile showing mastery of standards, benchmarks, objectives or skills • Can aggregate data across classrooms and compare those assessment findings with predetermined standards of achievement • Can generate reports from multiple data sources through a dashboard, allowing educators to analyze patterns and trends in student performance
Professional Development	• Allows for educators to get their professional development needs met and supervisors to complete educator evaluations • Can register and engage in professional development, search for professional development resources and identify professional development needs based on self or supervisor evaluations • Manages employee evaluations for teacher, principal and assistant principal evaluation processes as described in North Carolina State Board of Education policies • Allows educators to upload samples of artifacts to support their proficiency level on the teacher evaluation

Ohio – IIS Scan

As noted earlier, the Ohio Department of Education collaborated with MAESE to issue a joint IIS RFP. LEAs in Ohio committed to using either the State IIS or "Qualifying" LEA IIS in classrooms.

What IIS functions does the State support?

The Ohio Department of Education supports IIS functions such as online access to electronic curriculum, resources and tools aligned to revised content area standards (including CCSS), curriculum customization for differentiated instruction, online formative and interim assessments and data-analysis capabilities, including early warning indicators for teachers, administrators, parents and students. Provisions for fiscal sustainability include the following:

- A tiered (volume-purchasing) pricing model based on the number of students served
- Annual end-of-year snapshots (December 31) to determine the number of students and the pricing per student
- State funding for the IIS system with Race to the Top funds through August 2014
- Coverage of costs for the IIS by participating LEAs after August 2014

Shared lessons learned (in addition to those noted under Massachusetts) include the following:

- Explain the plan to all key stakeholders throughout the process and be sure to garner their support before issuing an RFP.
- Be aware that an unexpected length of time required by the legal department to negotiate a contract might affect schedules.
- Be resource-efficient by bidding jointly with another State (Ohio and Massachusetts) or by developing a contract amendment for this kind of multipartner bid.

Table 5 provides an overview of Ohio's IIS components.

Table 5: Ohio – IIS Components	
Standards and Curriculum	• Views and searches content standards • Manages multiple levels of all standards, such as content area, strand and indicator • Creates resources and new curricular content • Views and searches for instructional materials • Includes information about alternate instructional strategies • Determines the number of times a standard is accessed • Produces reports and analysis on coverage of standards
Instructional Practices	• Supports teacher-created instructional resources • Submits teacher-created materials to a district or statewide pool • Creates lesson plans with common or multiple templates • Supports team teaching by allowing more than one educator to access, manage and edit lesson plans based on class assignment • Permits workflow for submission and publication at LEA and State levels • Provides teachers with daily, weekly and monthly views of their lessons plans • Gives teachers an overview of all their course sections upon login • Allows for tracking of external resources such as outside tutors and home schooling
Assessment and Growth	• Imports or creates a variety of assessment item types • Links assessment items (e.g., items linked to a reading passage) and associated graphics or illustrations • Maintains an audit trail of the person who creates and uses an item • Supports assessments created by LEAs, schools and teachers • Permits authors to create, edit and delete their own assessments • Accommodates computer-based and online assessments • Supports online scheduling and rescheduling of assessments • Provides accessibility options to meet accommodations • Imports and exports assessment scores to and from other systems • Allows for scoring rubrics to be attached to assessment items • Creates assessment keys and preslugged answer sheets
Learner Profile	• Provides role-based access to demographic and special program information, and many other parameters to protect sensitive information • Can store and provide access to all State assessment results • Provides access to all data from other assessments (such as American College Testing and SAT) • Allows for storage/access to selected Special Education Data
Data Analysis and Reporting	• Allows teachers to view a variety of classroom assessments, including standards mastery and item analysis • Generates paper and electronic reports of student performance for parents • Offers a dashboard for summarizing class assessment results • Provides assessment data in table and graphical formats • Tracks student results from year to year • Supports a single-family login to a portal • Completes student profile, including demographics, schedule, attendance and grades • Reports student progress on standards • Provides stock preformatted reports and a reports generator tool to create custom reports, dashboards and other data analysis tools
Professional Development	• Will integrate the IIS system with iLearn, Ohio's current professional development system

Rhode Island – IIS Scan

The IIS chosen by the Rhode Island Department of Education (RIDE) will enable educators to access and analyze data showing how their students are performing on State standards. Teachers can then use this knowledge to provide students with appropriate instructional supports. The system will also allow school leaders to learn, analyze and act on the varied strengths and needs of their teachers and to provide teachers with targeted professional development, resources and assistance.

What IIS functions does the State support?

To provide LEAs with the best resources and sustainability along with local customization, RIDE is providing a full set of IIS or Instructional Management System (IMS) functions for curriculum, instruction, assessments, student demographic data and professional development. LEAs can also load local data such as Response to Intervention plans and lesson plans into the IMS.

The system will give teachers and principals a wide variety of tools, such as the following:

- Collection and retention of local assessment data—products now in use that are aligned with State standards, as well as custom or locally implemented assessments
- Access to model lesson plans and units of study
- Access to annotated student work aligned with standards that provide models of proficient work across grade levels
- Access to a large bank of test items mapped to State standards
- Ability to generate and print tests, collect data with ease and view results immediately
- Ability to know how a student is performing relative to the State's expectations, based on an array of assessment tools
- Ability to access and use all data collected on a student, including State summative test scores, attendance and discipline (future phase)
- Ability to analyze the longitudinal performance of students from their entry into the system through graduation

Through the data dashboards, educators and school leaders will be able to review individual, class and grade performance throughout the school year for their students and teachers. Rhode Island also is doing professional development through a train-the-trainer model, with a focus on LEA and school leadership.

To lower costs and sustain funding, RIDE may spread out the refresh rate of interim assessment items to a couple of grades per year.

RIDE learned the following lessons from development of its IIS:

- Be sure that the requirements for integrating systems (such as assessment and IMS) are clearly articulated at the beginning and hold vendors accountable for meeting those requirements.
- Conduct a pilot of the IMS with a representative sample of LEAs before rolling out the system statewide to test system functionality and educational processes.
- Limit the professional development on the IMS until LEAs have a live system that they are ready to begin using.
- Conduct thorough training for LEAs on how to accurately submit the foundational data (such as links between teachers, courses and students—especially at the elementary level) that will feed the IMS.
- Meet with LEAs on a monthly basis to share, learn and problem solve.

Table 6 provides an overview of Rhode Island's IIS components.

Table 6: Rhode Island – IIS Components	
Standards and Curriculum	• Offers a one-stop shop for data analysis and curriculum resources statewide • Provides model curriculum created by collaborative of LEAs • Permits teachers to use the IMS to schedule lessons, upload scope and sequence and search and find curriculum and curriculum resources by standard • Allows teachers to upload lesson plans to be shared, pending LEA vetting and approval • Uses the School Codes for the Exchange of Data course codes
Instructional Practices	• Includes curriculum units and instructional resources • Uploads resources at the unit level for math, science and ELA • Permits LEAs to upload instructional practice resources for any content area
Assessment and Growth	• Will provide access to formative and/or interim test-building engine and test management tool with embedded professional development for teachers • Will offer State-developed interim assessments three times a year in grades 3–11 math and ELA • Will develop assessment item banks in science, social studies, ELA and mathematics
Learner Profile	• Will allow users to access multiple sources of student data through a single, user-friendly point-and-click data dashboard
Data Analysis and Reporting	• Will support ongoing progress monitoring of students • Will complete study and analysis of longitudinal student data in the development of a statewide early warning system for the prevention of school dropout (to be integrated with the IMS for use by classroom educators and school and central administrators) • Will incorporate a growth-model analysis tool into the RIDE portal
Professional Development	• Provides school data teams of four people and central office staff 10 days of professional development on how to use local and State data to inform analyses of instruction, student supports and program evaluations • Will develop a series of online modules to build assessment literacy, focusing on the formative assessment process; LEAs will access these modules via the IMS