

A Response to the Maricopa County

MCESA REIL Assessment System

Request for Information

April 20, 2012
Serial 12055-RFI



empowering
educators with
meaningful data

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Executive Summary

Measured Progress is pleased to respond to this request for information solicited by the Maricopa County Education Service Agency. The work that MCESA has undertaken through its REIL grant, to improve student progress in six school districts, is recognized nationally as important and difficult work. Measured Progress has more than 28 years of experience working with districts and states on cutting-edge assessment programs and would appreciate the opportunity to partner with MCESA to fulfill its vision. We understand that REIL will provide significant benefits to your partner districts—as well as the state of Arizona—through the creation of a comprehensive assessment system aimed to improve student achievement and teacher effectiveness.

We know that the MCESA assessments will have high stakes attached to them for students, teachers, and schools. The results of these tests will serve as a highly visible foundation upon which the agency will make many important educational and budgetary decisions. This demands that the assessments not only have superb measurement quality, but also that their design includes opportunity for inclusion throughout the process, all while maintaining security. Measured Progress has enjoyed an excellent track record of accuracy and is widely lauded for our superior quality customized and “shelf” offerings.

Our proposal not only provides a foundation for full implementation of REIL, but also adds structure through our technology and content innovations, which will help MCESA establish and sustain the Assessment System (AS) it envisions. Given the constraints of this RFI, we were not able to provide information on every detail, but we welcome the opportunity to demonstrate our chain of innovative assessment and reporting modules that will add value to your Assessment System. In the following pages we detail aspects of our modules including

- item and assessment construction;
- assessment delivery systems suitable for high stakes and formative/classroom assessment;
- item delivery solutions that are fast becoming the standard in the industry;
- flexible technology that allows for paper-and-pencil administration, as well as digital administration of assessments on computers and other devices; and
- instantaneous scoring and reporting systems.

At Measured Progress we believe that students, their teachers, and all educators supporting student work are equal partners. Like the schools and districts we work with across the country, we are an organization of educators who work together to further student achievement. Each school, district, county, or state has its unique challenges and goals, and we recognize that solutions must be tailored to meet their unique needs.

Although the REIL program will be challenging work, Measured Progress recognizes that the personnel MCESA has assigned to the project are some of the best in the state. Measured Progress, too, has a dedicated staff, which has contributed to some of the most innovative work in assessment, and which shares a compelling vision: student needs and student learning come first in the work we do.

We trust that the information we have provided will be useful to you, as you continue to build upon your assessment vision. Please know that we would be happy to provide to MCESA any additional

information you may need to help you procure the right mix of services and products to succeed. We hope that Measured Progress may be your partner some time in the future.

TABLE 1: MEASURED PROGRESS CONTACT INFORMATION

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1.0 Purpose

At Measured Progress we are excited to have this opportunity to present information to the Maricopa County Education Service Agency (MCESA) to assist you in your development of an assessment system. We are pleased to describe to you in this request for information our NIMBLE TOOLS Assessment System and the expertise we have developed as a provider of high-stakes assessments during the last 28 years.

Please turn to the Additional Materials section at the end of this document for examples of our current literature for services, which includes information on our item and assessment creation; test delivery; and data analysis for states, consortia, counties, districts, and schools. We also believe strongly in the power of high-quality professional development to increase the effect of all these tools on student learning, and recommend it as a component of any balanced assessment system we build for our state and district partners.

We look forward to having the opportunity to discuss your needs in more detail, and to demonstrate the Measured Progress solution components that address those needs. In the meantime, we describe our solution in this document, and invite you to visit www.measuredprogress.org to learn more.

2.0 Intent

We understand your need to collaboratively create and store items and assessments, deliver those assessments, and store and analyze the results for the purpose of evaluating student learning. Our system modules are being designed for easy integration with states' and districts' pre-existing systems—such as the REILize Decision Support System (RDSS) module within your REIL program—and we will work to ensure a smooth integration.

The Measured Progress NIMBLE TOOLS Assessment System is designed with educator collaboration in mind. We've used it with state educators to facilitate the development of item specifications, and with our district educator teams to help them select/edit items to create assessments to share with their colleagues. Our state and district partners also benefit from the reporting functions within our solution that make it easy to store and share favorite one-click report templates, or communicate plans, strategies, and findings via a dashboard.

The features and functions you seek in this request for information (RFI) are provided by the Measured Progress solution:

- ✓ Authoring
- ✓ Test Setup
- ✓ Administration
- ✓ Scoring
- ✓ Reporting
- ✓ System Support

When you enter into a partnership with Measured Progress, you gain not only an assessment system tailor-made to your specific needs, but you also benefit from guidance from our content and assessment experts, project managers, psychometricians, and IT professionals who have made Measured Progress a respected leader in the assessment field, and who share your goal to help students succeed. Our staff would welcome the opportunity to embark in a collegial partnership with your respected professionals.

3.0 Requirements

In the following pages we provide responses to the RFI requirements with as much information as we can fit within the page-length restriction. As MCESA begins designing its assessment system, we will be happy to share our approach to assessment and answer questions about our solution options. We look forward to being able to demonstrate our solution and introduce you to experts we would bring to a partnership with you.

General Requirements

Measured Progress is a Dover, New Hampshire-based, not-for-profit organization dedicated to student learning and improving instruction in the classroom. We have experience that includes 28 years of developing and implementing full-service, customized, criterion-referenced/standards-based, large-scale assessments. In addition, Measured Progress is the nation's leading provider of alternate assessment for students with cognitive disabilities. We serve school districts across the country, providing tools for creating assessments and using assessment data to inform instruction. Measured Progress's success and innovation reflects our ability to listen and respond with tailored solutions.

Expertise

Measured Progress has built our systems, designed our processes, and trained our staff for the world of customized, standards-based assessment. Some of the characteristics that distinguish us from our competitors include the following:

- From day one, all of Measured Progress's assessment contracts have involved customized, criterion-referenced/standards-based and norm referenced programs.
- We do not focus solely on any single part of the assessment cycle; instead we provide the full spectrum of services and deliverables to our partners across the country.
- Since the 1980s, we have integrated professional development as part of large-scale assessment programs in order to help promote teaching and learning.
- We have created and used perhaps the widest variety of measures and item types of any provider in the industry, from high-quality multiple-choice, short-answer, and longer constructed-response items, to portfolios and individual and group performance events. Recently, we have invested considerable resources in developing and testing technology-enhanced items for online delivery purposes.
- All of our internal systems, processes, and applications have been developed from the perspective of customizing virtually everything we do to the individual needs and demands of each state and district partner. Over time, we have converted most of our processes from manual to automated operations. Most of these changes, however, have enabled us to maintain—and in many cases enhance—the degree to which we can tailor our services for each partner, without sacrificing quality or timeliness.

Despite our growth, our focus has remained constant: it's all about student learning. Period. We provide superior, tailored, customer service because that is who we are, and our systems, processes, and dedicated, creative staff readily enable us to do so. We collaborate with partners and provide informed advice as we jointly work to meet their unique needs and objectives.

We are a resource on key education issues, to our partners as well as to policy makers, the media, and other education stakeholders. We participate in industry associations, meetings, and conferences, and share insights gained with our partners. We have a particularly well-founded perspective on the challenges educators face in light of No Child Left Behind (NCLB) and the Individuals with Disabilities Act of 1997 (IDEA) and its reauthorization.

We bring our expertise in the following areas to every partnership we enter into and every assessment solution we develop:

- Item and test development
- Psychometrics and data analysis
- Data processing
- Analysis and reporting
- Test item analysis
- Standard setting
- Project management

Experience

We have not partnered with Arizona educators to date, but we are very familiar with the Arizona assessment climate. We have built a solid reputation in the Southwest region of the United States: we have partnered with Utah, Nevada, New Mexico, and the Bureau of Indian Affairs on several large-scale assessment projects.

- In Utah, we manage the state's large-scale online criterion-referenced testing contract; in addition, we are the state's contractor for the development of technology-enhanced items in science.
- In Nevada, we are the provider of the Nevada Proficiency Examination Program (300,000 students tested) and the Nevada Alternate Assessment.
- In New Mexico, we develop and deliver the New Mexico Standards Based Assessment and Graduation Assessment Programs.
- Measured Progress provides technical assistance to the Bureau of Indian Education (BIE) on a Navajo Oral Language Assessment.
- Contracts at the state and agency level also include ongoing work with the National Assessment of Educational Progress (NAEP), the Gates Foundation (including teacher effectiveness evaluation work), and several additional state assessment programs.

- We were selected by the SMARTER Balanced Assessment Consortium (SBAC) to fulfill several critical functions: to date we are creating item specifications for items that will be part of SBAC’s next-generation assessment, building the SBAC assessment platform architecture, and developing policies and a manual related to testing accommodations and accessibility.

While we are actively engaged in providing assessment programs and consultation at the state and consortium levels, we also apply the same expertise on a smaller scale to school districts of varying sizes, and regional educational services agencies. District partners in the Southwest include Gallup-McKinley County School District and Portales Municipal School District in New Mexico. These districts are using our platform and item bank to develop their own short cycle assessments to monitor student progress and guide instruction. On a larger scale, Michigan’s Wayne County Regional Services Education Agency (RESA) is incorporating our platform and item bank in the teaching-learning cycle at its 34 school districts and 97 public school academies. Please see a sample list of Measured Progress projects in the Additional Materials section.

The Measured Progress Solution

As a leading provider of high-stakes state accountability assessments, Measured Progress is well positioned to offer a comprehensive assessment solution—from end-of-year accountability tests to formative assessments given in classrooms throughout the school year. Our differentiator is our ability to provide a comprehensive set of systems, tools, and quality content that permits states, counties, LEAs, and districts to address their own needs in their own way.

Our model is a web-based, enterprise suite of capabilities that is rich in functionality and includes flexible item, test creation, delivery, and reporting options. We offer a menu of modules that address all aspects of assessment, and then we work with you to configure the specific system of integrated, inter-connected modules you need.

We will provide a customized solution for each partner—tailored to its needed functions and scale. We will offer the same high-quality modules to each of our partners, at all levels: the factors that distinguish our solutions from one another are the functional components selected, and scale. The key components of the assessment solution we are developing are described in the table below. Measured Progress is eager to work collaboratively with MCESA to customize a solution that does not just respond to current requirements, but which provides comprehensive options for building a program that will make MCESA’s assessments a model for other agencies.

TABLE 2: THE MEASURED PROGRESS NIMBLE TOOLS SUITE OF ASSESSMENT TOOLS

Platform Capabilities	Features
Item Authoring and Banking	<ul style="list-style-type: none"> ▪ Item creation and banking solution to address next-generation assessments and provide partners a more flexible, usable, accessible, and powerful way to create, manage, and use items, test forms, and metadata.

Assessments	<ul style="list-style-type: none"> ▪ Assessment design tool that will allow educators to create comprehensive assessments designed to assess learning of a broad set of content skills and knowledge. ▪ Assessment delivery platform that will reflect an emphasis on the user and a focus on accessibility for all. It is being carefully designed to support the real-life demands faced by educators and provide multiple options for administration such as online administration (to include computer adaptive testing of progress) and paper/pencil administration.
Reporting and Analysis	<ul style="list-style-type: none"> ▪ Analysis and reporting tools that will allow educators to transform tests results, student demographics, and program participation data from disparate sources into district strategies for improving student achievement, and classroom tactics for standards mastery.
Professional Development	<ul style="list-style-type: none"> ▪ Professional development and training on a variety of topics that support item and assessment design and provide a link between assessment and classroom instruction
Content	Features
Items	<ul style="list-style-type: none"> ▪ Common Core bank of items being specifically developed to meet the Common Core standards, to include these: <ul style="list-style-type: none"> ○ Multiple choice, short answer, technology-enhanced, constructed-response, and performance tasks ○ Capability for teachers to build test forms for classroom administration ○ Staged-adaptive item sets of varying difficulty levels that are presented to students based on their performance earlier in the assessment ○ Item-adaptive items of appropriate difficulty levels that are presented to students based on their performance earlier in the test ○ Accessibility options into the content and tailored to individual students
Testlets	<ul style="list-style-type: none"> ▪ Formative testlets that teachers will be able to use to gain instructional feedback. Short tests consisting of items designed to assess learning around a cluster or group of like standards.
Fixed Form Tests	<ul style="list-style-type: none"> ▪ Formative interim, benchmark, and summative classroom assessments that will allow reporting of student progress within and between grade levels on a CCSS scale

As another differentiator in our approach, we integrate professional development expertise into our tools and training modules that not only help train users on our solutions, but also provide aid to educators in using assessments and assessment-related data to improve student learning. To the extent that we can weave professional development into the fabric of both our platform and its implementation, we will succeed in the goal of both Measured Progress and MCESA: to improve student learning.

Cost Structure

The Measured Progress NIMBLE TOOLS Assessment System is a suite of integrated modules that address the overall assessment value chain. We will build specific solutions as a tailored collection of the needed modules, and price the solutions accordingly. We look forward to demonstrating the modules to you and discussing your needs in depth.

Hosting Options

The Measured Progress NIMBLE TOOLS Assessment System is a centrally hosted, enterprise-level application service. Student demographic data may be loaded into the system from student information systems (SIS) with multiple checkpoints for data verification. Our system was built using industry-standard technologies and best practices in security, networking, hardware, and software. The centrally-hosted Data Administration System (DAS), in conjunction with the architecture of the Test Delivery System (TDS), maximizes security and minimizes central hosting costs.

Implementation

We forge long-lasting alliances with our partners by listening carefully and thoughtfully, tailoring the Measured Progress solution to meet their unique needs—particularly as they change over time. Our implementation process for MCESA would consider both the agency’s technical requirements as well as the cultural/human capital implications of introducing our solution to your county, districts, and schools.

Technical Constraints

In the past two years we have doubled our technology investment and dramatically increased our number of technology staff members. We follow industry best practice guidelines and use the Agile Methodology development process, ensuring we employ innovative and collaborative processes and procedures. We use industry standards and tools for all of our software development, production, and implementations. We use the following Microsoft® software: Windows Server®, SQL Server®, and .NET® framework (including Visual C#, ASP.NET® and Visual Basic.NET®). We also utilize HTML and AJAX as part of our standard development tool set. Our investments and fluency in these technologies enable us to design usable systems at scale: intuitive for individual user; powerful in their ability to manage data and facilitate reports; and capable of evolution to next-generation assessments.

The Measured Progress NIMBLE TOOLS Assessment System platform is compatible with commonly used browsers. Educators can access it online—including with mobile devices—from anywhere with Internet access. Students take tests with scan-able paper tests or online. For low-

stakes classroom tests, some of our district partners use student hand-held responders (clickers). We will soon be incorporating web camera technology for entering student scores, as well.

In addition to the above accessibility supports, our NIMBLE TOOLS Online test delivery module will enable a variety of assistive communication tools to navigate the test delivery environment for students needing special accommodations. These include dual switch devices, sip-n-puff devices, alternate keyboards, joystick devices, touch screen, and potentially eye gaze software (no student has employed this software with the system or its predecessor to date). In effect, all tools that employ alternate keys and/or Tab-Enter communication are supported through our interface, which is designed to be Tab-Enter navigable. In addition, we have developed an Application Programming Interface (API) that allows our platform to communicate directly with a refreshable Braille display, eliminating the need for third-party software for students who use such displays to access and navigate digital media.

Measured Progress Online Test Delivery Technical Requirements

The table below outlines hardware and software requirements necessary for schools to administer online high-stakes summative tests on the NIMBLE TOOLS Online platform. Some requirements in our technical requirements for online assessment are delineated as minimum, recommended, and "or greater." Meeting minimum requirements enable our platform to function and perform as designed. Recommended requirements--for example 802.11N for wireless connectivity-- reflect standards to ensure best possible network performance at the local level. Similarly, some operating system variants and random access memory (RAM) values are expressed as "or greater". For example, computers with more memory generally yield better system performance on computers. These requirements are subject to change as enhancements are made and support for new operating systems is added.

TABLE 3: NIMBLE TOOLS ONLINE TEST DELIVERY HARDWARE/SOFTWARE REQUIREMENTS

Local Network			
Network Connection Specifications	Wired (required for PTW): 100 Mbps Fast Ethernet TCP/IP Wireless: <i>Minimum: 802.11g</i> <i>Recommended: 802.11n</i>		
Firewall, Proxy, Internet Content Filtering	Set to allow connections to: *.measuredprogress.org		
Uniform Resource Locators (URLs)	Set to allow connections to contract-specific URLs.		
Internet Protocol (IP) Addresses	Set to allow connections to contract-specific IP addresses.		
Ports	Set to allow connects to ports 80 and 443		
Student Test Workstation (STW) - 1 for each student testing simultaneously			
	Macintosh® 32-bit	Windows 32-bit	Windows 64-bit

Operating System ²	OS X [®] 10.6.x Snow Leopard [®] 10.7.x Lion [®]	Windows XP [®] SP3, Windows Vista [®] SP2, or Windows 7 Home Premium or greater	Windows 7 Home Premium or greater
RAM	10.6 Snow Leopard: 1 GB or greater 10.7 Lion: 2 GB or greater	Windows XP SP3: 512 MB or greater Windows Vista SP2: 1 GB or greater Windows 7: 1 GB or greater	2 GB or greater
Internet Browser	None required. Firefox [®] Portable Kiosk (FPK) is installed with the Student Test Workstation (STW) software		
Processor	G4 867 MHz or greater	Pentium III 1.33 GHz or greater	1 GHz x86-64 processor or greater
Monitor	32-bit color or greater, 1024 x 768 resolution or greater		
Font Families	Times New Roman [®] , Helvetica [®] and Verdana [®]		
Proctor Test Workstation (PTW) and Data Administration System (DAS)			
	Macintosh 32-bit	Windows 32-bit	Windows 64-bit
Operating System ²	OS X 10.5.8; 10.6.x; 10.7.x	Windows XP SP3, Windows Vista SP2, or Windows 7 Home Premium or greater	Windows 7 Home Premium or greater
Proctor Test Workstation (PTW) and Data Administration System (DAS)			
RAM	10.5 Leopard: 512 MB or greater 10.6 Snow Leopard: 1 GB or greater 10.7 Lion: 2 GB or greater	Windows XP SP3: 512 MB or greater Windows Vista SP2: 1 GB or greater Windows 7: 1 GB or greater	2 GB or greater
Processor	G4 867 MHz or greater	Pentium III 1.33 GHz or greater	1 GHz x86-64 processor or greater
Internet Browser	Safari [®] 3.2.3 Safari 4.0.4 Firefox 5, Firefox 10	Internet Explorer [®] 7.x Internet Explorer 8.x Firefox 5, Firefox 10	Internet Explorer 8.x, Internet Explorer 9.x; Firefox 5, Firefox 10
Flash	10		
Pop-Up Blocking Software	Must be configured to allow pop-ups from *.measuredprogress.org		
Monitor	32-bit color or greater, 1024 x 768 resolution or greater		

¹ 10.6 Snow Leopard requires that optional component Rosetta[®] is installed from the 10.6 installation disk for Intel-based computers.

² Measured Progress recommends that auto-updates for operating systems and browsers are turned off on all computers used for testing.

**Technical requirements are subject to change pending release of new browsers or operating systems. These requirements reflect current quality assurance testing and are to the best of our knowledge.

A Note about Preparing Content for Online Test Delivery

Measured Progress has been working for more than a decade with states that deliver computer-based assessments. We have experience in ensuring consistent formatting, as states have moved from paper-based testing to computer-based assessment; for example, Measured Progress has been successful in working with the state of Utah as it transitioned its assessment from paper-and-pencil to nearly 100 percent online delivery. We look forward to the opportunity to apply the knowledge we have gained from this work to assist MCESA. Using the SIF and QTI frameworks, we have established standards and protocols to ensure smooth migration of content from varied sources and of varied formats into our systems. We have also worked with partners to apply accessibility tags in a consistent and high-quality manner and to then deliver highly accessible tests online for operational state testing programs.

More recently, with the development of our NIMBLE TOOLS Item Banking module, Measured Progress is creating a highly advanced mechanism to seamlessly integrate all functions that play a role in the lifecycle of items and tests. This mechanism allows for straightforward authoring, reviews, revisions, tracking, and rendering of items in both paper-based and computer-based applications. We have also developed methods for automating the creation of accessibility tags, and we are currently refining methods to assist item developers in editing accessibility tags.

Since our initial entry into computer-based testing in 2001, Measured Progress has been focused on developing a computer-based solution that delivers test content to students in a way that

- is intuitive to the student and other users,
- makes the content of the items accessible to all students,
- facilitates collection of student responses,
- makes optimal use of screen real estate, and
- meets the needs of the content represented in the item.

3.1 Suggested Workflow

The Measured Progress NIMBLE TOOLS Assessment System is exceptionally flexible; in fact, the solution was built in direct response to the specific work flow needs of our partners. For an example of some of our typical workflows, please see figure 1 in the Specifications sections, and figure 3 in Test Setup.

4.0 Specifications

Measured Progress is a leader in developing customized assessments. We are recognized for working closely with our partners to develop solutions that accomplish their goals—at any level they desire, from consultation, to facilitating or performing item standards-setting; to providing item and test creation tools and training; to supplying high-quality items and assessments to incorporate in their programs. We welcome the opportunity to work with MCESA to develop a content creation solution that utilizes your resources—both human and fiscal—to a degree that is optimal for your organization and the districts you support.

Measured Progress Approach to the Common Core State Standards

In a white paper published by Dr. Stuart Kahl, founding principal of Measured Progress, Dr. Kahl states that “...categorical alignment of existing items does not necessarily capture the spirit of the Common Core, often in terms of Depth of Knowledge” (Kahl, 2011)¹. Measured Progress content experts studied the Common Cores State Standards (CCSS) item specifications when they were released and also found that, in many cases, there were huge gaps in coverage that existing items just could not fill. Additionally, we reviewed existing item banks in use and discovered that most were not addressing the intent of the Common Core to show students' progression of difficulty to prepare them for high school graduation and their future college or career aspirations. It was for these reasons that Measured Progress elected to embark on a Common Core assessment program that involves creating brand-new items and item sets that specifically address the additional content and skills called for by the CCSS.

Measured Progress's COMMON CORE Assessment Program has been designed to measure the learning expectations of the COMMON CORE and the extent to which students are on track, at each grade level, to achieve college or career readiness by completion of high school. Our Common Core assessments will provide information to help school administrators and teachers align curriculum and instructional programs and to make decisions about program improvements for supporting student achievement.

The Measured Progress COMMON CORE Assessment Program will

- provide items and fixed forms for formative, benchmark, and summative assessments for use at the district, school and/or classroom level;
- bridge Measured Progress' COMMON CORE assessment content and test construction expertise with a balanced assessment system platform or with third party applications;
- include pre-built testlets, and test forms that report student progress within and between grade levels on a CCSS scale;
- include multiple item types (multiple-choice, short answer, technology-enhanced, constructed-response, and performance tasks); and
- allow accessibility considerations to be built into the assessments and tailored to individual students.

¹ Kahl, S., Ph.D. (2011). The Common Core State Standards: How Well are Existing Items Aligned? How Measured Progress is Approaching the Common Core Differently. Dover, NH. Retrieved March 28, 2012, from http://www.measuredprogress.org/c/document_library/get_file?uuid=2a3dc43e-b31c-4cc7-b570-8f0d591f9ebd&groupId=10157

4.1 Authoring

Item Authoring System

Measured Progress views item development as a collaborative process that combines the experience and expertise of many people with diverse perspectives: teachers, MCESA staff, curriculum specialists, content and assessment specialists, editors, graphic artists, students (during field testing), and administrators. We would bring to our partnership with MCESA both our extensive expertise in item authoring and facilitating the process, as well as our item-authoring tool. This NIMBLE TOOLS Item Banking tool's design has evolved to fit the needs of our work with partners on high-stakes assessments; we are aggressively adding a large number of capabilities and features to also reflect the needs of our own item authors and our district users.

The Measured Progress tailored solution for MCESA can include our NIMBLE TOOLS enhanced development and item-banking module. This module is designed to address next-generation assessments and provide partners a more flexible, usable, accessible, and powerful way to collaboratively create, manage, and use items, test forms, and metadata. The web-based system contains all pertinent information for each item, task, or stimulus and retains all changes. Access rights are embedded in the system to ensure that users have access only to those items and data for which they have been granted permission. It serves as an external system for reviewers, enabling them to view and add comments to items, tasks, and stimuli.

The item banking module supports XML export of items and assessments in IMS, Question and Test Interoperability (QTI), and Accessible Portable Item Profile (APIP) standard formats. This solution component allows for the creation and management of both print- and web-based production and publishing of traditional test item content, as well as the more complex item types, statistics, and content such as cover and directions pages.

The Measured Progress NIMBLE TOOLS Item Banking module is designed to allow authorized users to

- access a secure, web-based application;
- create and edit permissions for user groups by project and function;
- upload, edit, and manage curriculum and process frameworks and standards;
- configure project specifications for item banks and assessments such as grades, content areas, item types, rubric templates, and test designs;
- enter, format, and review item content, graphics, and associated metadata;
- insert comments, as authorized, in item read-only mode;
- create, save, sequence, and print user-defined groups of items for quick access and workflow batching;
- view item group statistics such as counts by item type, option balance, and standard coverage;
- manage items in separate operational and pilot sections;

- create and manage item-writing assignments and workflow;
- manage and retrieve items throughout an item's life cycle based on user-defined criteria and unique item metadata; and
- apply tags and upload files to enable accessibility features for computer-based testing, such as text-to-speech, and allow export of content that is compatible with APIP.

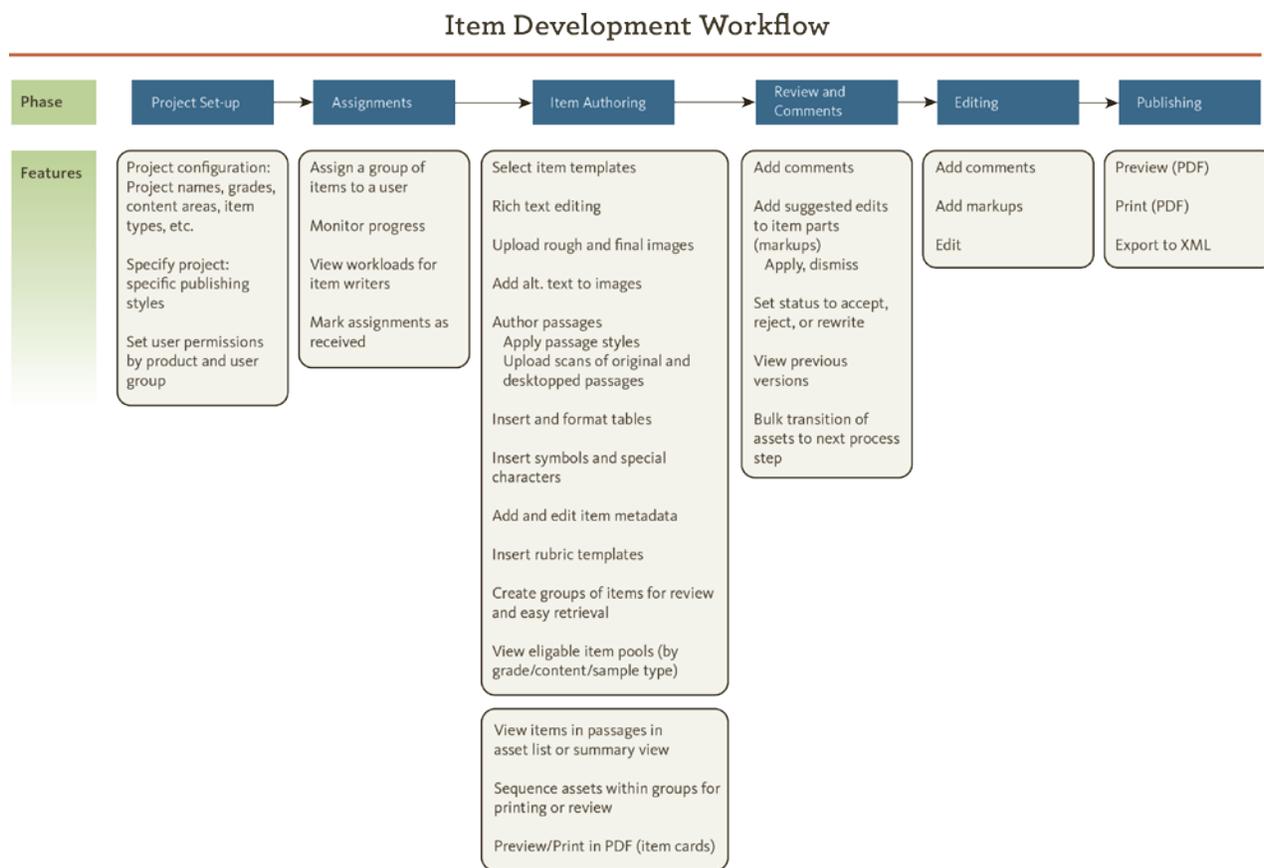
Our NIMBLE TOOLS Item Banking module will allow for the creation, management, and print- and web-based production of traditional test item content, as well as the more complex item types, statistics, and content—such as cover pages, direction pages, multi-part performance tasks, innovative computer-based items with animation, interactivity, and video, and content for alternate assessments. Users will be able to easily import and export item content and metadata, and export to test publishing applications.

The item banking module will include a database that provides electronic access to each item (text and graphics) as well as pertinent information associated with items (cognitive complexity, accommodations, bias and sensitivity review status, etc.) Within the bank, items will be arranged by standard, content area and grade level. This module will have full security controls built in, and will be capable of allowing limited re-use.

Measured Progress is the market leader in designing items for Accessible Portable Item Profile (APIP) compliance, and the NIMBLE TOOLS Item Banking module ensures that all content supports this industry-accepted standard. APIP and our ability to deliver its benefits to MCESA add strength and flexibility to serve greater populations of students through advances in the online provision of accommodations and the creation of APIP content standards.

MCESA will benefit from assessment content produced in a system that can enable the full rigor applied to summative content workflows. Furthermore, our secure online item banking module will provide auditing and workflow management features to restrict access by role and by time in relation to project work. The NIMBLE TOOLS Item Banking module is designed to meet the high demands for validity, associations to standards, and varieties of item types that exist in the summative, high-stakes paradigm. Our systems design enables any combination of workflow management features to adapt to processes that meet the needs of all types of assessment programs.

FIGURE 1: TYPICAL MEASURED PROGRESS ITEM DEVELOPMENT WORKFLOW



Field Testing

The development of a comprehensive item bank aligned to the Common Core State Standards not only requires an extensive item development effort, but also a carefully considered data collection design. In order to have item statistics that correspond to a single reporting scale appropriate for multiple administrations and for inclusion in a moderate- to high-stakes environment, a significant number of student responses must be collected for each item. To this end, we would work collaboratively with MCESA to design and implement a data collection plan that optimizes your needs while meeting the desired psychometric requirements.

Distractor Rationale

During the course of Common Core item development, Measured Progress will include distractor rationales for multiple-choice items. Some types of reports that are available within our platform provide the distractor rationale statements along with the key. This information is meant to give teachers another source of information about their students' performance in order to make decisions about instruction and remediation for students needing additional support.

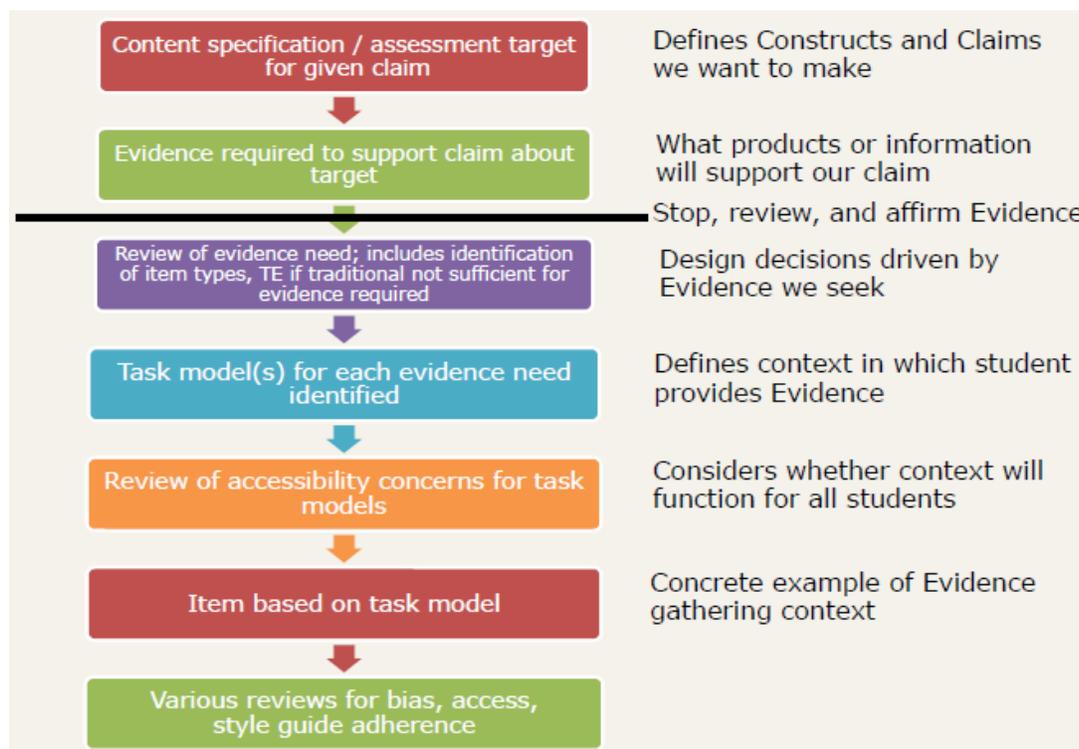
Content Development Considerations

The introduction of Common Core State Standards has brought about changes in the way the standards inform content development. The content specifications that guide the development process must provide clear, rigorous, and focused assessment targets. These content specifications also will

- be translated from grade level CCSS into content frameworks along a learning continuum,
- be used for creating test blue prints and item/task specifications, and
- use assessment evidence at each grade level to provide item and task specificity and connections between instruction and assessment.

Measured Progress uses an evidence-centered design process for developing item specifications for CCSS-based content (see Figure 2).

FIGURE 2: EVIDENCE-CENTERED PROCESS FOR DEVELOPING ITEM SPECIFICATIONS



Use of Language

Recognizing that language influences test responses, we conduct internal reviews based on a number of criteria regarding language use, including issues relating to Universal Design as well as to bias and sensitivity. We strive to include language, symbols, and content that cannot be construed as sexist, racist, or otherwise potentially offensive, inappropriate, or negative in any of our test items.

Bias and Sensitivity

Item and bias/sensitivity reviews play a critical role in collaboration by inviting local educators to review and comment on the items that have been written to assess their state’s standards. As a testing company, we make a commitment to providing equal opportunities for all students to demonstrate their abilities and knowledge. Our staff could work with MCESA to facilitate the work of a Bias/sensitivity Review Committee using bias/sensitivity review guidelines previously developed, and could adapt as needed.

Data Review

Measured Progress can facilitate data review committee meetings each year following administration of the assessments. The objective at data review committee meetings is to review each item to ensure they meet intended statistics parameters. Data review committee participants also review item performance stemming from the field test. We work with educators at the data review meetings to flag any items that should not be used operationally.

Accommodated Procedures

If MCESA desires to apply the APIP standard to its content development and online test delivery solution, Measured Progress can deliver this through its NIMBLE TOOLS Online test delivery module. APIP provides a standardized structure for meeting students’ access needs during assessment. APIP accomplishes this by allowing educators to develop a Personal Needs Profile (PNP) for each student and then using that profile to tailor the administration of assessment content based on information provided within the profile. In this way, APIP does not structure the provision of access supports or accommodations based on student IEP, LD, ELL or other status categories. Rather, APIP recognizes that several needs cut across status categories and thus are not category dependent.

The solution for MCESA could be a fully APIP-compliant solution. To this end, we would offer the following accessibility and accommodation options:

TABLE 4: COMPUTER-BASED DELIVERY SUPPORTS

	Supports Needs of		
	Learning Disability	Physical Disability	English Language Learner
Accessibility Through Alternate Representations			
Spoken (Read Aloud) for:			
Text only	X	X	X
Graphics only	X	X	

	Supports Needs of		
	Learning Disability	Physical Disability	English Language Learner
Text and Graphics	X	X	
Non-visual students		X	
Braille text for Refreshable Braille display		X	
Tactile representations (cost option)		X	
Sign Language:			
Signed English (cost option)	X	X	
American Sign Language (cost option)	X	X	
Item Translation (cost option)			X
Keyword Translation (cost option)			X
Captioning/Text-representation of media elements		X	
Accessibility Through Adapted Presentation			
Magnification			
Enlarged text display (for student with moderate vision needs)		X	
Enlarged graphics (for student with moderate vision needs)		X	
Magnified environment (for student with low vision needs)		X	
Reverse Contrast		X	
Color Overlay		X	
Alternate Text and Background Color		X	
Accessibility Through Adapted Interactions			

	Supports Needs of		
	Learning Disability	Physical Disability	English Language Learner
Auditory Calming	X		
Masking	X		
Line Reader	X	X	X
Additional testing time	X	X	X
Breaks	X	X	X
Keyword emphasis	X		X
Language Learner Guidance (cost option)	X		X

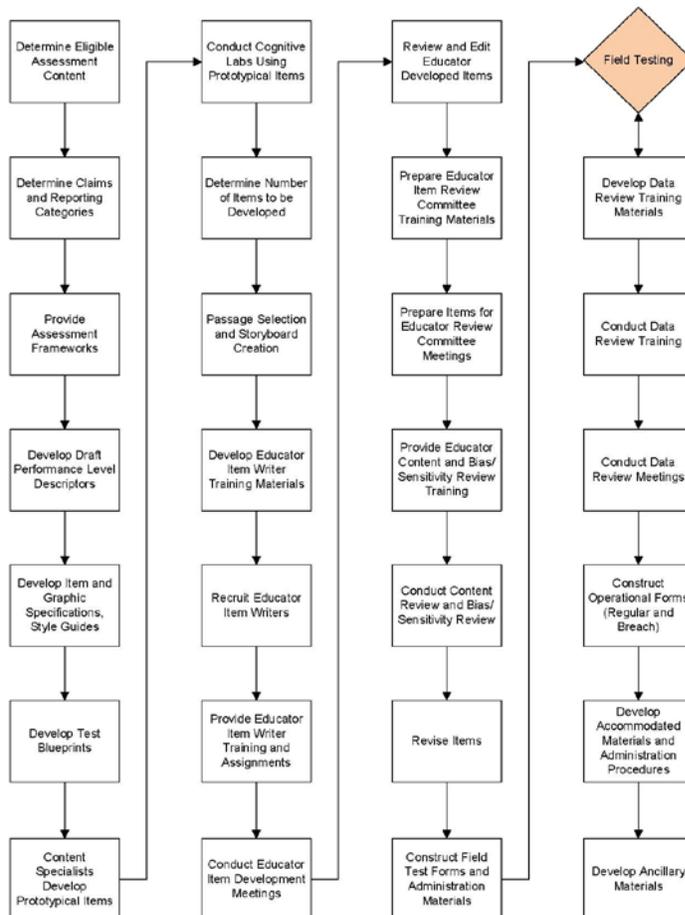
Measured Progress COMMON CORE Content

In addition our item authoring guidance and tools for our partners to use as they develop their own items, we will also offer to our partners a pool of high-quality, aligned by design, Measured Progress COMMON CORE items. As we describe earlier in the Specifications section, we also offer testlets and fixed form test sets. As a component of the Measured Progress COMMON CORE Assessment Program, our FIXED FORMS assessments were developed to provide a valid psychometric measure of student performance over standards during the school year and from year-to-year, for students in grades 3-11. These benchmark assessments help schools close the gap between classroom performance and statewide assessment scores. Because items in the forms look and feel like state assessment questions, students become familiar with the content and are more comfortable with state accountability tests. FIXED FORMS report scaled scores will along with performance level descriptors. They also report Lexile® and Quantile® measures to help educators measure year-to-year growth and link student results to differentiated classroom and at-home activities. This assessment program thus provides principals and teachers the ability to make growth comparisons both between and within grade levels.

4.2 Test Setup

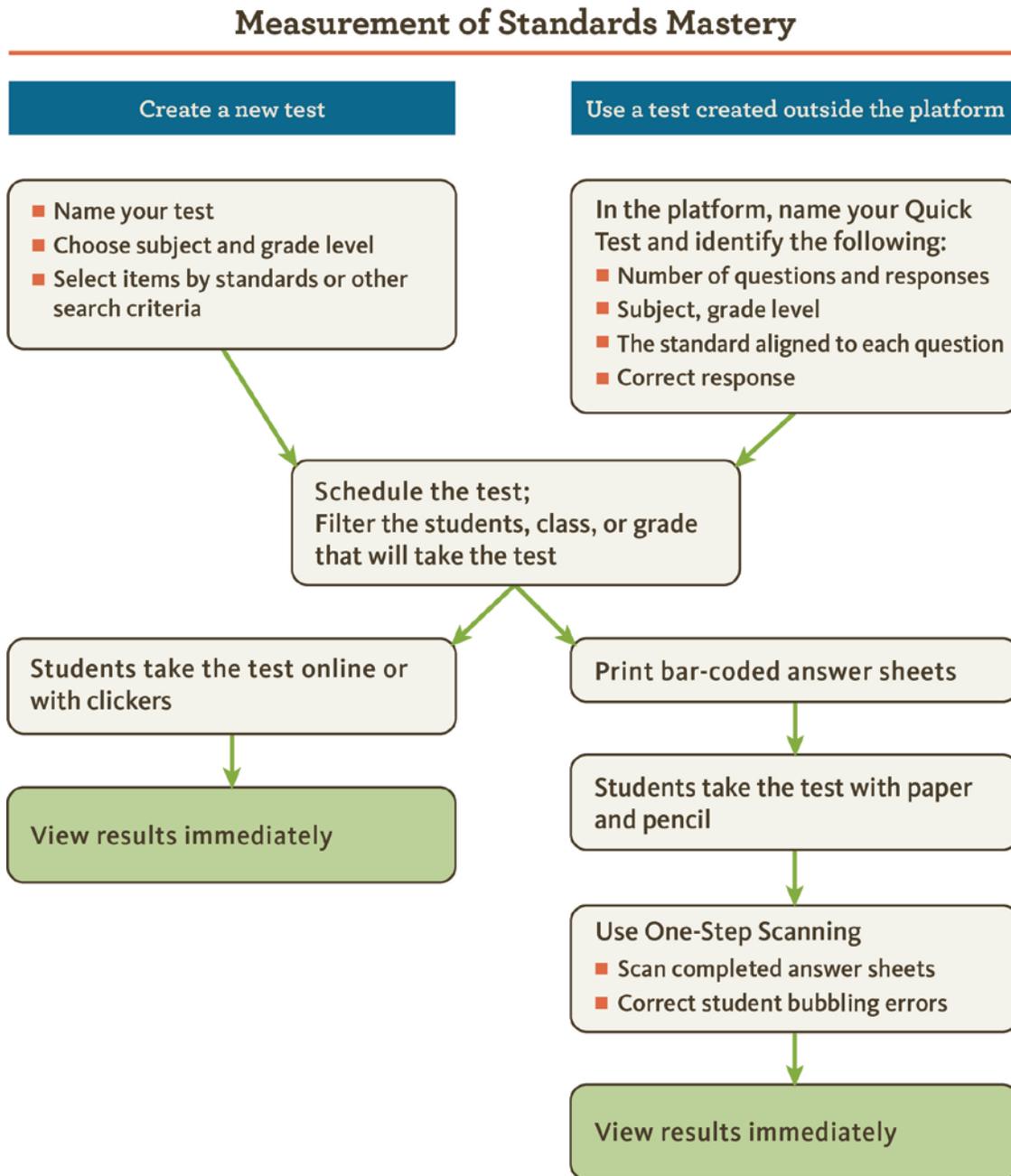
We include the following flowchart as an overview of the activities that Measured Progress typically performs in the development process for high-stakes summative tests.

FIGURE 3: WORK PLAN FOR TEST DEVELOPMENT



The Measured Progress NIMBLE TOOLS Assessment System simplifies the test creation process for school and district users. These users tend to follow a method like the following, in figure 4, to create frequent formative or district benchmark assessments.

FIGURE 4: SIMPLIFIED TEST SETUP FOR DISTRICT AND SCHOOL USERS



Measured Progress will provide a flexible local assessment platform that will offer schools diverse item/question types, test delivery modes, and score entry choices for low-stakes assessments. Our powerful test generator will give your educators the capability to create, administer, and evaluate assessments that align to their curriculum and focus on standards. Here is a quick summary of some key test setup benefits:

- The platform will provide the ability for educators to create or import purchased testlets and fixed test forms.
- For tests that exist outside of our platform, educators can create “quick tests” to preclude having to re-create the tests.
- Users can create multiple forms with different questions sequences (to discourage cheating) for both paper and online testing.
- Educators can work together by publishing group reports and common assessments, fostering collaboration and more effective student progress monitoring.

4.3 Administration

Measured Progress recognizes the considerable demands assessment activities place on local educators: the work is time consuming, yet accuracy is vital. We have extensive experience in the preparation and logistics required for large-scale assessment programs similar in scope and size to the MCESA REIL assessments. It is for these reasons that Measured Progress has made significant investments in new systems and processes to simplify test administration for everyone involved. The Measured Progress solution also addresses smaller-scale test administration for low-stakes district and classroom assessments.

Administration of High-Stakes Assessments

Measured Progress provides an online test delivery system for use in the MCESA summative assessment program. Our NIMBLE TOOLS Online test delivery module is born out of experience and insight and is built to capacities of large scale programs. It is designed to ensure technological usability and technical validity, and compatibility with evolving industry standards for assessment content, accessibility, and online delivery. The system is the sum of several important sources of expertise, innovation, and experience, and is reliable, scalable, and ready for next generation assessments.

The student test solution we would build for MCESA could include various navigation, layout, and test-taking tools, available by test or item type. It could provide accessibility tools based on test or item type, designated by a student’s personal needs profile (PNP), and configured by the student. The current and planned student test interface tools are listed in Table 5.

TABLE 5: PLANNED SYSTEM UPGRADES TIMELINE

Navigation	Current	Fall 2012	Summer 2013
Next/Back Buttons	X		
Test Map	X		
Summary Page Links	X		
Bookmark (mark for review)	X		
Screen Layout	Current	Fall 2012	Summer 2013
View Selection/Item	X		
View Selection Only		X	
View Item Only		X	
View Multiple Selections		X	

Companion Tools	Current	Fall 2012	Summer 2013
Calculator (4 Function)	X		
Calculator (Scientific, Graphing)			X
Multi-color Highlighter		X	
Strikethrough	X		
Notes			X
Reference Sheets		X	
Rich Text Editor (word processing tools)		X	
Equation Editor		X	
Ruler		X	
Protractor			X
Accessibility Tools	Current	Fall 2012	Summer 2013
Read Aloud: Text Only	X		
Read Aloud: Graphics Only		X	
Read Aloud: Text and Graphics	X		
Read Aloud: Non-visual	X		
Color Chooser (text/background color)	X		
Zoom View (magnifier)	X		
Line Reader		X	
Answer Masking		X	
Custom Masking			X
Adjust Font Size		X	
Enlarge Graphic		X	
Reverse Contrast			X

Color Overlay			X
Auditory Calming			X
Sign Language Support			X
Keyword Translation			X

Administration for District and Classroom Assessments

The Measured Progress NIMBLE TOOLS Assessment System is a reflection not only of the needs of states, counties, and consortia developing high-stakes assessments, but also of the everyday assessment needs of the classroom teacher and district administrator. The Maricopa County educators will benefit from the following characteristics:

- The flexible assessment platform will provide diverse item/question types, test delivery modes, and score entry choices.
- Teachers will be able to deliver assessments on paper/booklet, online, or with hand-held responders (clickers).
- Educators will have the capability to print answer sheets at any printer networked to one of their school sites, or from printers located at central district locations.
- The test delivery engine will integrate with the school’s student information system (SIS) to receive automatic, nightly refreshes of all rosters for scheduling and scoring functions.
- Individual student answer sheets will have the student name, teacher name, test, and test date bar-coded and printed on--ensuring a high level of accuracy during scanning and reporting, and eliminating any need for staff members to bubble in this information.
- Teachers will be able to schedule their own tests, or district personnel can efficiently select and schedule whole courses, classes, or schools.

Program Readiness Testing

Measured Progress acknowledges that MCESA may elect to use a technology readiness tool similar to either the PARCC or SBAC readiness tools. If MCESA elects not to use the SBAC/PARCC readiness tool model, Measured Progress can work with MCESA to design one.

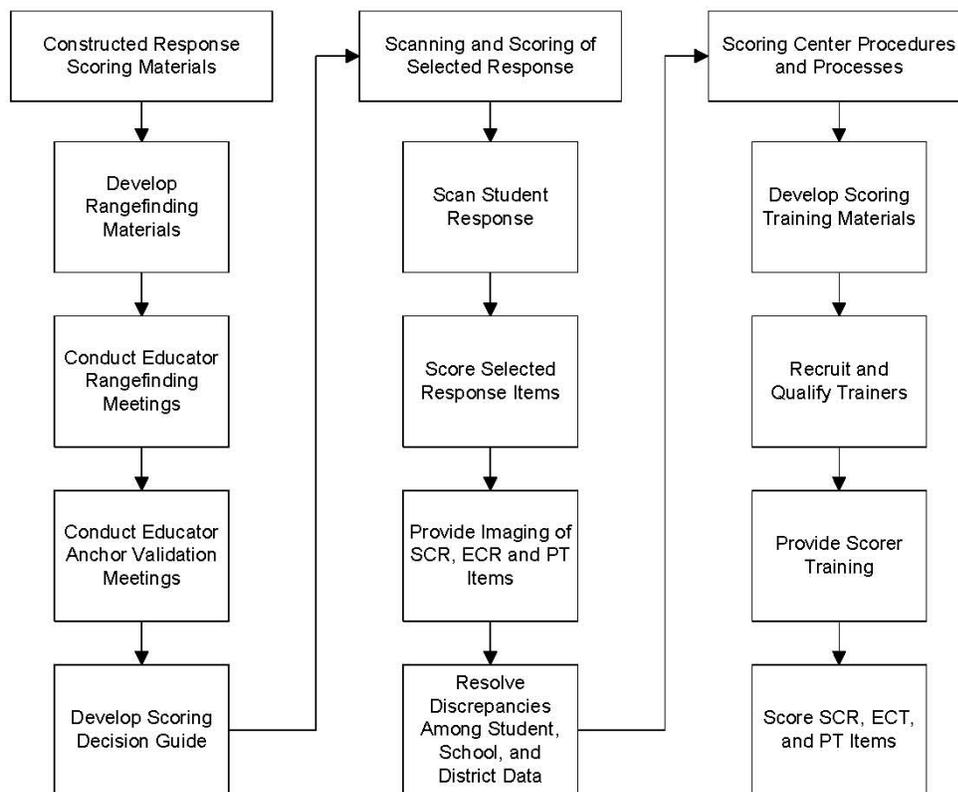
Scanning

Users can scan with most TWAIN-compliant scanners.

4.4 Scoring

Measured Progress has many years of experience scoring and reporting the results of high-stakes assessments. Our success has been founded on our strategy of collaborating with our partners both during and after rangefinding meetings to determine and reinforce their item scoring requirements. The figure below demonstrates the typical scanning and scoring workflow we apply to our high-stakes assessment projects.

FIGURE 5: TYPICAL HIGH-STAKES ASSESSMENT SCANNING AND SCORING WORKFLOW



At the district level, administrators can disaggregate the high-stakes assessment data to any student level they choose; they can also view the high-stakes scores in combination with district benchmark scores.

Maricopa County schools’ goals for student improvement undoubtedly demand that student performance data be accurate and available immediately. With the Measured Progress solution, local test results are available as soon as the tests are taken online or answer sheets are scanned. Classroom rosters and student demographic data are automatically updated daily. There is no delay in waiting for information; it is always at the fingertips of your teachers and administrators. Students

who take tests online will likewise see their own multiple-choice test results immediately. These are some of our other scoring features:

- Educators can select the option to view and correct onscreen flagged response errors including no response and multiple responses.
- Students can take tests online or with clickers. Our classroom solution currently supports clickers from Promethean, SMART, CPS, and Renaissance Learning. Teachers can view the student input while the test is being taken.
- Teachers can use efficient screens to manually enter scores online.
- The Custom View Output function allows users to select data fields and export the data to spreadsheets. Data fields selected can include a multitude of demographic and program participation variables, as well as scores. Educators can also save reports as PDF and Excel files.
- Users (with proper permissions) are free to modify answer keys after assessments have been scanned. The system will automatically adjust scores within the system with no additional steps required by staff.

Storing Longitudinal Data for Districts

Measured Progress can load provided historical state scores for the past several years. We are well versed in creating data maps for importing historical state and national test results, including SAT, ACT, and AP scores. Once the import is complete educators can analyze the results using customizable report templates and onscreen analytical tools.

4.5 Reporting/Analysis

Measured Progress’s customizable report templates and analytical tools are designed to help educators establish benchmarks and monitor success in meeting performance goals for the county, district, schools, and student subgroups. They also give teachers item- and standard-level feedback to inform their classroom instruction—whether they are working individually or collaboratively in professional learning communities or school/district data teams.

Reports for MCESA Analysis

Measured Progress could provide both static and online reporting/analysis capabilities for MCESA. The online system will provide authorized staff the ability to print reports directly from their desktops. Measured Progress’s online reporting system is customizable, flexible, and robust enough to produce high volumes of complex reports in the fastest possible timeframes without sacrificing quality or accuracy. The system also minimizes or eliminates the costs associated with the production of printed reports and any reprint costs that sometimes occur with paper reporting.

The online system will provide an optional interactive functionality that allows diverse users to filter reports in a variety of ways (e.g., by English language learner status, gender, performance level). An additional benefit is the ability to archive all static reports from previous administrations, providing easy retrieval of reports from prior administrations without having to maintain paper copies. The optional interactive system would allow MCESA to run interactive reports—such as disaggregated school, system, and state reports—in real time, with the capability of exporting data to PDFs, circle graphs, and Microsoft Excel® and comma-separated values (CSV) files. Authorized users would have the ability to access both static and interactive reports.

Analytical Tools for Districts and Schools

Measured Progress provides administrators and teachers with multiple customization capabilities, including in-depth filtering and interactive drill-down tools. Data analysis results are presented in tables and graphs that neatly summarize trends or succinctly highlight issues.

- Measured Progress’s comprehensive reporting capabilities will give your educators access to strategic- and instructional-decision-making data as soon as tests are scanned or online tests are taken.
- To measure success in meeting goals for improving student achievement administrators will be able to create, save, and share test and student sets for easily updating favorite report templates.
- Standardized test scores will give administrators the big picture about school and program successes.
- Drill-down capabilities will help users gain more insight into class or student performance to reveal any trends or aberrations.
- Student demographic and program participation data, updated automatically each night from your district’s student information system (SIS), will provide further clarity about student performance, and help educators evaluate programs and curricula.

- Teachers will receive immediate feedback from their classroom assessments to identify instruction adjustments needed or students requiring intervention for specific standards; in fact, they'll be able to monitor students' assessment performance even as the tests are taken with clickers.
- Your solution will provide several reports with longitudinal reporting capabilities. Educators can track individuals or groups, including progressive cohorts (e.g., last year's fourth graders compared to this year's fifth graders), matched cohorts (the exact same set of students who took multiple tests over time) and differing cohort (e.g. last year's fourth graders compared to this year's).
- Reports use a variety of charts, tables, graphs and colors. Report formats and colors support quick and easy analysis of complex data, always highlighting those students who need additional assistance on particular content or standards, or those close to moving to the next level of mastery. Several reports include color bars, with on-screen click-and-see capabilities.
- Teams of teachers will be able to self-evaluate and gain insight into each others' instructional successes, using past and current rosters to follow their students' progress.
- Administrators will easily identify and report students who meet the criteria for federal and local intervention programs such as RTI and ESEA/NCLB; Our platform not only filters out the students meeting the performance, program participation, and demographic criteria; it will also allow users to tie them to alerts, and to add the students to groups to monitor and develop collaborative response tactics.

School and district personnel will be able to run reports for any group of students they choose. They could select their students based on the demographic, course enrollment, and program participation data that exist in the district's SIS. These include school, grade, teacher, course, gender, ethnicity, disability, EL designation, etc.

Administrators will value the custom reporting options that they can use to monitor and report on school achievement benchmarks and milestones; help teachers evaluate their instruction; identify programmatic areas that need attention; track student subgroups' progress vis-à-vis district and school goals; and identify program and teacher successes for replication.

4.6 System

Managing Item and Test Form Status

Measured Progress solutions give educators control of item and assessments status to provide the capability for collaboration while also protecting security. The large-scale item banking capabilities of the Measured Progress NIMBLE TOOLS Assessment System provide the ability to indicate the status of each item (e.g., not yet reviewed, content- and sensitivity-reviewed, field tested, data- and bias- reviewed, when used operationally along with standards, assessment objectives and item statistics), and will permit assessment forms to be readily assembled.

At the district and school levels, administrators can choose to set an item status to “active” to allow all district teachers to use it in classroom-based assessments, or mark it as “inactive” so that teachers are unable to view and use it. Administrators thereby reserve specific items for district tests only.

Complete district and classroom assessments are equally protected: permissions give others the right to view (share), and or update/modify assessments. User permissions give administrators the ability to keep tests private to a particular user or group (using the shared group log-ins option), or to make them public to all users. This system functionality similarly supports team collaboration while maintaining the security of a select group of assessments.

Importing Tests and Scores

The Measured Progress solution is designed to allow educators to view multiple measures of student achievement. They can import historical and current state and national test scores, including AIMS, SAT, and ACT scores. We also work with our partners to import tests and items already in use. Our platform additionally allows educators to save time by setting up answer keys and test skeletons in the platform for pre-existing tests created outside our platform, so students can take the tests within our platform without the teachers having to recreate them.

Online User Support

Our district partners make use of a searchable Online Help Center, which covers system features with how-to videos and downloadable PDF documents.

Training and Professional Development

Measured Progress takes an in-depth, collaborative approach to professional development. Our focused discussions with leadership in states, counties, districts, and schools allow us to identify challenges and collectively provide professional development services and resources to a variety of stakeholders via diverse delivery mechanisms. As needs vary, we work with our state and district partners to design a plan that works specifically for them in order to improve teacher practice and student achievement. Utilizing our years of experience delivering assessment training in test creation, scoring, and reporting, we work closely with our partners through all phases of the assessment system contract, from design and development through administration and reporting.

Item Writer Training

As a service to our partners, we can conduct an intensive training program with educators prior to the start of item development. This training includes information that we use during the design

phase of any item-writing project. The item-writing training can include topics such as interpreting and using item specifications; understanding definitions and applications of Depth of Knowledge (DOK) and cognitive complexity; principles of Universal Design; bias and sensitivity guidelines; passage and stimulus selection; and the measurement qualities of the various item types: multiple-choice and other selected response types, constructed response, technology-enhanced items, and performance events. We will discuss the needs for educator item writing training in Maricopa County, but it might include, at a minimum, training on item entry into the NIMBLE TOOLS Item Banking module, and the following specifications related to production of high-quality items:

- Content—Items must allow students to demonstrate in-depth understanding of the content area.
- Standard match—Items must properly align to content and process standards.
- Curriculum—Items must be appropriate to students’ classroom experiences.
- Creativity—Item sets must contain a variety of approaches to measuring the standard.
- Cognitive complexity—Items must match the cognitive demands implied in the standards.
- Mechanics—Items must meet psychometric conventions such as parallelism of options.
- Item training modules

LEA Training

Measured Progress Professional Development offers services that provide instruction on bridging assessment and classroom instructional practices. We believe that educators need support in understanding the various types of assessment (assessment literacy), as well as assistance in utilizing the power of information provided as a result of assessment (interpreting data). This foundation provides educators with the tools needed to gauge the accuracy of curricular scope and sequence, investigate instructional practices, narrow or close achievement gaps, and improve the education of all students. When educators recognize that assessments mean information, building and sustaining a coherent and aligned system for instruction and assessment becomes attainable.

The training, implementation, and support solutions we would recommend to MCESA would help to sustain and empower LEAs to

- enhance their own local assessment programs;
- provide a framework for integrating assessment into the school culture;
- build capacity to manage and sustain an ongoing cycle of assessment and data use;
- provide opportunities for the collaborative use of data to address instruction and student learning; and
- foster a road map for continuous improvement.

TABLE 6: SAMPLE IMPLEMENTATION MODEL

Administrators	Team Leaders	All Faculty and Staff
<ul style="list-style-type: none"> ▪ Meet with administrators ▪ Help identify team leaders and other support staff ▪ Provide interim WebEx meetings for ongoing support ▪ Provide access to all training materials; e.g., downloadable resource guides and online modules ▪ Meet with support staff to assist with program, resource, and initiative alignment as a means to ensure all are engaged in the learning and implementation process 	<ul style="list-style-type: none"> ▪ Train team leaders in content and facilitation techniques ▪ Coordinate with support staff to ensure appropriate links to services and programs ▪ Tap into existing learning team organizational structures ▪ Utilize online materials to train cohorts or teams of faculty ▪ Engage in social networking with other LEAs 	<ul style="list-style-type: none"> ▪ Make the vision transparent ▪ Create an imperative for program; e.g., base need for local data, and illustrate how all administrators, faculty, and staff will support engage and support the program ▪ Outline specific roles to determine how all will participate ▪ Identify and coordinate efforts among all professional development initiatives and existing or planned programs ▪ Participate in training sessions with leaders

We guide LEA representatives to identify existing infrastructures (e.g. learning teams, professional learning communities, grade-level teams, etc.) to maximize the delivery of training without imposing a new structure into their districts or schools. Measured Progress will assist LEA representatives who are responsible for training in creating context and impetus for the use of the platform, delivering assessments, scoring, and interpreting data. We want educators to recognize and learn to utilize the benefits of the NIMBLE TOOLS platform, not just learn how to operate its features.

Customer Support

Our philosophy is that every partner we work with deserves superior, custom-tailored solutions and services. Our collaborative approach is ingrained in our organization. Our systems, processes, and dedicated staff throughout all functional departments at Measured Progress readily enable us to implement this philosophy.

Measured Progress establishes and maintains efficient, effective, and reliable help desks and service centers for our partners. For high-stakes administration partners, we provide service centers with toll-free customer service numbers to serve as first-line support. The service centers are located in the continental United States and are staffed year-round by English-speaking Measured Progress program assistants.

Outside of regular business hours, we have a voicemail system available. Customer service staff can also be reached via email. Our team returns phone and email messages in a timely manner.

We realize there may be inquiries made to our service centers that will require further research and follow-up. To ensure prompt response to such questions, the service center is closely linked with the program management team and other functional departments throughout Measured Progress. Incoming phone or email inquiries are resolved during live contact with the caller whenever possible. For issues that require further troubleshooting, we provide the caller with an estimate of when the issue can be resolved, either verbally for phone-based inquiries, or by return email for email-based inquiries. We also provide the caller with a tracking number for the open issue from the service center's issue tracking system. It is the policy of our service centers to notify customers of any status updates to their open issues.

The Measured Progress customer support team documents all inquiries. Information is captured during each inquiry including name, location, general description of the request, and date and time. We document detailed information on the issue, including any system issues or outages should they occur. We also capture details of resolutions along with duration of response time. We pride ourselves on quick, accurate responses.

4.7 Non-Functional Requirements

4.7.1 Availability

Our Measured Progress NIMBLE TOOLS Assessment System has been designed for high availability and fault tolerance. Redundant hardware at all layers within the Data Administration System ensures that there is no single point of failure; servers can fail and the system will continue operating with no perceptible change to the end user. System monitoring allows for immediate alerts of hardware or software failures, allowing for rapid resolution and restoration of the failed components.

Measured Progress conducts occasional maintenance to servers and adheres to a strict policy to obtain permission for any requisite down time; otherwise, the system is operational around the clock.

4.7.2 Backup and Restoration

With the Measured-Progress-hosted solution, Measured Progress will provide dedicated hardware, firewalls, virus protection, backups, and a secure FTP (128-bit encryption). For district partners, Measured Progress provides nightly backups of the database with three months of retention and off-site copies.

4.7.3 Capacity

We currently test 2.5 million students annually, using both print and computer-based delivery. Each year we load-test the system to ensure it can handle the anticipated number of users. In 2010, we load-tested our online testing engine to a capacity of 50,000 concurrent users. Currently, Measured Progress administers online assessments in Utah for all grades and content areas; in Massachusetts for the Massachusetts English Proficiency Assessment (MEPA); and in the New England Common Assessment Program (NECAP) for the Online Writing assessment and for accommodated versions of the Science assessment. In 2010, approximately 315,000 Utah students in grades 3 through 12 were assessed online.

4.7.4 Security

Because of our extensive experience fulfilling state assessment needs, we at Measured Progress recognize the critical nature of maintaining test security for high-stakes summative tests. We understand that ensuring security and quality control are of paramount importance in maintaining the highest possible standards of fairness, integrity, and public confidence in assessments. Working alongside educators in district and schools for a number of years has also given us an understanding of the importance of student information security at the local level. We are thoroughly versed and compliant with all aspects of the Family Education Rights and Privacy Act (FERPA). All our data-handling and reporting processes and policies are designed to ensure that student records are maintained with the highest levels of privacy and security.

Measured Progress has developed standard security procedures that are implemented during every phase of test development, administration, and reporting. We are happy to assist state and district

partners in establishing their own security procedures. We also incorporate our standards into the item-writing, assessment, and reporting modules we provide. Educators gain access to data through our applications only over an encrypted connection that requires a username and password for authentication. Passwords and all other data are stored in the database protected by Microsoft SQL Server's security. Administrator may also encrypt passwords in the database for an additional level of security. Web browsers left connected to the applications will time-out if left idle for a specified period of time.

We provide robust, role-based, easy-to-manage security options that give maximum flexibility in assigning roles and permissions at the state, LEA, or school levels. Administrators can create an unlimited number of user roles with specific capabilities to create, update, read, delete, and execute. They can assign a user login as many roles as the district would like to grant to the user.

Additional Materials

We urge you to read the following documents for more information about Measured Progress and our assessment solution.

- Sampling of Measured Progress Projects
- “Performance Assessment: An Idea Whose Time Has Come (Again)” by Stuart Kahl, Founding Principal.
- Common Core white paper, “The Common Core State Standards: How Well Are Existing Items Aligned? How Measured Progress Is Approaching the Common Core Differently” by Stuart Kahl, Ph.D., Founding Principal

TABLE 7: SAMPLING OF MEASURED PROGRESS PROJECTS

<p>Bureau of Indian Education: Develop Oral Native Language assessments for use by Indian tribes in pursuit of an alternative definition of Adequate Yearly Progress.</p>
<p>Gates Foundation Teacher Effectiveness: Develop a system to use performance tasks in conjunction with other measures to evaluate teacher effectiveness. Tasks are developed in the content areas of science, social studies, and mathematics and will be administered to students in untested grades and subjects.</p>
<p>Gates Foundation Teacher-Moderated Scoring: Create and pilot teacher-moderated scoring systems, as well as training protocols and materials to improve educators’ ability to score student work through a combination of human and machine scoring. Also looking at the feasibility of using teacher-designed assessments and teacher-moderated scoring for student achievement data to evaluate teacher effectiveness.</p>
<p>National Assessment of Educational Progress: Develop achievement levels for the NAEP writing test; grades 8 and 12 in 2011; grade 4 in 2013.</p>
<p>Nevada Proficiency Examination Program: Test students in grades 3 through 8 and 10 in reading and mathematics and grades 5, 8, and 10 in science. Retest opportunities offered. Includes multiple-choice for all grades and constructed-response in grades 4 through 8. 300,000 students tested.</p>
<p>Rhode Island Interim Assessment: Develop test items that assess instructional content delineated by the Common Core State Standards, initially in mathematics for grades 8 through 11. Initiative will expand to include all grades, adding English language arts, science, and social studies, as well. The project will enable districts, schools, and teachers to create locally managed, online delivered, interim assessments. Funding for the project comes from Race to the Top.</p>
<p>SMARTER Balanced Assessment Consortium: Common Core Information Technology Systems Architecture: Develop the technical architecture to serve as the foundation for the Consortium’s technical systems; provide ongoing support and services.</p>
<p>SMARTER Balanced Assessment Consortium: Common Core Item and Task Specifications and Guidelines: Develop item and task specifications, style guide, bias and sensitivity guidelines, and guidelines for accessibility and accommodations for English language learners and students with disabilities.</p>
<p>SMARTER Balanced Assessment Consortium: Common Core Testing Accommodations and Accessibility Policies and Materials: Develop policies and guidelines to make the Consortium’s assessments highly accessible to the broadest range of students; also take into account individual student needs and circumstances.</p>

SMARTER Balanced Assessment Consortium: Participation and Training Materials: Develop training materials for item writers, as well as for reviews of item content, bias/sensitivity, and accessibility. Provide guidelines for state participation in assessment development and implementation.

Utah Computer-Based Testing System: Develop and conduct online testing for students in grades 3 through 12 in mathematics, science, and English language arts. Gradually converting to as close to 100 percent online administration as possible (90 percent in 2010-2012). Multiple-choice items. 24,000 students tested per grade and subject.

Utah Science Criterion-Referenced Test: Test students in grades 4 through 12 in science. Includes multiple-choice and technology-enhanced items. 38,000 students per grade tested.

Utah ELA and Mathematics Criterion-Referenced Test: Test students in grades 3 through 11 in English language arts and grades 3 through 7 in pre-algebra, algebra I, geometry, and algebra II. Multiple-choice format. 38,000 students per grade tested.

Nevada Alternate Assessment: Test students in grades 3 through 8 and 11 in mathematics and reading and grades 5, 8, and 11 in science. Administered one-on-one and videotaped. 2,000 students tested.

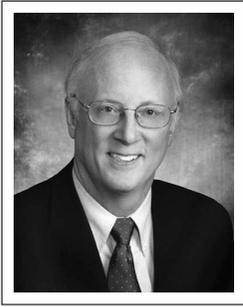
New Mexico Standards-Based Assessment, High School Graduation Assessment: SBA: Test students in grades 3 through 8, 10, and 11 in reading and mathematics; grades 4, 7, and 11 in science; and grades 3, 5 and 8 in writing. Includes multiple-choice, short-answer, and open-ended items, as well as editing tasks. 210,000 students tested.

Wayne County Regional Education Services Agency (RESA): These educators began the Curriculum, Learning, Assessment for Student and School Achievement (CLASS A) project powered by Measured Progress in 2007. They required a collection of integrated tools, system, and ideas to assist schools in improving student achievements in a regional area encompassing 34 school districts and 97 public school academies. Centering their work on the Michigan State Standards, the project supports the instruction process from curriculum to teaching/learning, to assessment, to curriculum, and back.

Portales Municipal School District: This K–12 district serving 3,000 students originally adopted our system in order to warehouse state SBA results and district assessments, but individual school sites chose to use it for Short Cycle Assessments (SCA) to better monitor student progress on the New Mexico Standards.

Gallup-McKinley County School District: This K–12 client with 12,100 students reports success with administration of district benchmark Short Cycle Assessments in grades three through eleven. Their Measured Progress solution allows district personnel and school site administrators and educators to generate reports for the Short Cycle Assessments so that student results can be analyzed based on New Mexico state standards for the purpose of guiding instruction to support improved learning.

Twin Rivers Unified School District: Twin Rivers reports success with easy state reporting for the English Language Learner (ELL) program. Their Measured Progress assessment system allows this pre-K-12 district with 30,000 students to run one-click reports so staff members can evaluate results and then direct their instruction to support improved learning. They also use common assessments built by district personnel—in conjunction with state tests—to analyze various demographic groups.



Performance Assessment— An Idea Whose Time Has Come (Again)

Stuart Kahl, Ph.D.
CEO
Measured Progress

No matter where you stand on common-core standards, Race to the Top, 21st Century skills, or ESEA reauthorization, one clear benefit of all the focus on reform is the education community's reinvigorated interest in the promise of performance assessment as a component of a balanced assessment system.

As envisioned here, performance assessment is a testing approach that relies on extended activities that yield scorable products or performances. Current discussion supports the practice of using interim performance approaches, along with more traditional summative assessments, to address accountability requirements. In addition, it's clear that "readiness" skills such as problem solving, critical thinking, and communication, are difficult to evaluate with many existing state tests and better measured by performance assessment.

In the pre-NCLB days, many states undertook pioneering efforts in large-scale performance assessment. Much was done right, but there was plenty of room for improvement, too. The lessons learned during that period were invaluable. We now pay great attention to the alignment of tasks to standards, and we have approaches to scoring, standard setting, and other psychometric tasks that are better suited to performance assessment. In short, we know how to do it.

I recommend that states, districts, and schools embrace locally managed and scored, curriculum-embedded performance assessment. However, it's important to take steps to ensure that the tasks and measurement are of high quality:

- Students should be engaged in projects that are closely tied to content standards and, for accountability purposes, that undergo review and pilot procedures similar to those used for the development of traditional tests.
- Project tasks should yield multiple, individual, scorable products demonstrating each student's knowledge and skills—products such as written reports, oral presentations, or other demonstrations we know how to score reliably.
- For high-stakes programs, local scoring could be audited by central "second" scoring on a sampling basis.

If curriculum-embedded, these assessments would have immediate classroom uses, both summative and formative. In short, performance assessments not only can measure student learning, they can be a rich part of the learning itself.

I have every hope that a much broader acceptance of performance assessment will be an enduring legacy of all the programs, initiatives, and reforms that currently dominate conversations in the education environment.

What do you think?

Let us know at twocents@measuredprogress.org



**The Measured Progress Difference
It's all about student learning. Period.**



WHITE PAPER

The Common Core State Standards: How well are existing items aligned?

How Measured Progress is approaching the Common Core differently

by **Stuart Kahl, Ph.D.**
Founding Principal



The Common Core State Standards: How well are existing items aligned?

How Measured Progress is approaching the Common Core differently



Stuart Kahl, Ph.D.

Educators anxious to give their students a head start with the Common Core State Standards may be intrigued by classroom assessment products on the market that are purported to be tightly aligned to the Common Core State Standards in English language arts and mathematics. However, there's more to alignment than meets the eye. A lot of effort has been devoted to re-categorizing items in existing banks according to the new standards. While this is a worthwhile effort, it leads to one-way alignment that does not fill the gaps in coverage associated with new standards not addressed at all by existing items. Furthermore, categorical alignment of existing items does not necessarily capture the spirit of the Common Core, often in terms of Depth of Knowledge. And finally, tests created by randomly drawing individual items from a bank may not cover standards well or address aspects of the Common Core that require mini-sets of items, pairings of passages, etc.

Our own classroom assessment platform contains many items that “correlate well” to the Common Core. But there are still gaps. We’re filling those gaps by creating brand-new items and item sets that specifically address the additional content and skills the Common Core touches upon.

Common Core Correlation Shows Lack of Alignment

In fact, Rick Hess’s *Education Week* piece “How Big a Change Are the Common Core Standards?” includes information from University of Pennsylvania Education School Dean Andy Porter, who published Common Core correlation data in the April 2011 issue of the *Educational Researcher*. His findings: “The Common Core Standards represent a considerable change from what states currently call for in their standards and

in what they assess.” (Hess, 2011).

Porter’s report reveals that the alignment between the Common Core and existing state standards per grade was .25 in mathematics (1.0 is perfect alignment and 0.0 is no alignment) and .30 in reading. Even when researchers clustered grades (3–6 and 3–8), alignment only improved to .35 in mathematics and .38 in reading. State assessments fared worse: Porter found that the average alignment to the Common Core mathematics standards came out to .19, dipping to .17 for reading (Hess, 2011). Remember, the tests weren’t designed to measure those standards, but they offer evidence that you can’t just “re-align” a test or its items: there is more work to be done.

“...categorical alignment of existing items does not necessarily capture the spirit of the Common Core, often in terms of Depth of Knowledge.”

Stuart Kahl, Ph.D.

Measured Progress’s team of curriculum and assessment experts has painstakingly studied the Common Core Standards. When the standards were released, our team paid particular attention to how we would code existing released items to the Common Core. In many cases, we found that item pools were often overly concentrated on one standard. In some cases, we found huge gaps—that there were no existing items that fit under specific Common Core Standards at all. Our approach to creating assessment items has always been to first look at a standard or group of standards and then

craft items (or assessments) that best measure that standard. The Common Core is no different. We recognize the need to write items that specifically address those standards.

English Language Arts

There are several key differences between state English Language Arts (ELA) standards and the Common Core Standards. First, the Common Core calls for a truly integrated model that brings together reading, writing, speaking, and listening. Until now, most state programs have just assessed reading and writing—never speaking and listening. Second, the writing parts of the test traditionally have been separate from the reading parts. This is not the case with the Common Core. For example, Common Core writing standard 9 requires students to analyze literary and informational texts and compose a written response showing evidence from these sources. This is a key way in which the Common Core brings together reading and writing.

Additionally, reading is driven by a careful selection of passages at each grade level. The Common Core discusses the use of qualitative measures, quantitative measures, and matching readers to both the text and tasks. For years, Measured Progress has used this approach to help select passages at the right grade level; however, quantitative measures are not precise. In their paper, entitled *Publishers' Criteria for the Common Core State Standards in English Language Arts and Literacy, Grades 3-12* (Coleman and Pimentel, 2011), authors David Coleman and Susan Pimentel acknowledge how challenging it is to select passages at the right level of difficulty. They will be providing more specific guidelines for publishers and curriculum developers soon (Gewertz, 2011). Measured Progress test development experts adhere to these guidelines as they develop reading items that accurately assess the Common Core.

“The Common Core places great emphasis on the importance of students being able to compare content across reading passages,” stresses Jan Katien, Measured Progress senior English language arts advisor. According to Katien, you cannot measure some Common Core Standards

with existing item banks, which lack the types of passages necessary to ask students questions that align with the standards. She provides the example of reading informational text at grade 6, in which standard 9 asks students to “compare and contrast one author’s presentation of events with that of another (e.g., a memoir written by and a biography on the same person).” An item bank must include these two types of texts in order to measure this standard accurately. More importantly, a test containing items drawn from the item bank must include the paired passages and questions uniquely developed for that pair.

“Most importantly, most testing programs using existing banks aren’t getting at the intent behind the Common Core, which is really to reflect a progression of difficulty, to move students along, so that by the time they are finished with high school, they truly are ready for college or career.”

*Jan Katien, Senior ELA Advisor,
Measured Progress*

The types of content students are asked to read and write about in the Common Core also differ from what is currently included in many state tests. As students advance, there’s a growing emphasis on informational text. This is somewhat true even at grades K–5, where students are encouraged to read social studies and science informational texts. Starting at grade 6 and continuing through grade 12, there are 10 specific standards each for science and social studies at each grade level. Students are encouraged to find justifications for answers, articulate different points of view, read actual historical documents, and analyze those texts and understand what points of view are being expressed. In the past, students were encouraged to read in these content areas, but never to this level of detail, according to Katien.

She adds that the Common Core places a greater emphasis on using media—a component that to date has not been included in state tests. For example, at grade 4, standard 7 requires students to “make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.” The inclusion of media aims to engage students in a meaningful way in a task, as well as help them integrate media with research skills. It also provides students with different sources and unique opportunities to analyze materials in ways they have never been able to in tests prior to the Common Core.

“If there’s already a pre-existing item bank that has been coded to the Common Core Standards, educators will find that there are lots of gaps,” Katien says. “The passages are driving the kinds of items that will measure the Common Core. I think what you’ll find with existing banks coded to the Common Core is that there will be a lot of standards that aren’t coded, or if they are coded to many standards, you’ll discover that they’re not accurately coded. I think that you’ll find that there are a couple of very general standards that might be used very frequently. Most importantly, most testing programs using existing banks aren’t getting at the intent behind the Common Core, which is really to reflect a progression of difficulty, to help move students along, so that by the time they are finished with high school, they truly are ready for college or career.”

Mathematics

As anyone who has taken more than a cursory look at the mathematics standards can tell you, a curriculum based on Common Core State Standards in mathematics will look very different from one based on traditional state standards.

Most sets of state standards consist of content and process standards. Content standards define what students should be able to do by the end of each grade level, while process standards indicate the broader skills students should continually develop over time. Unfortunately, the content standards have often been treated as checklists of isolated

topics, while the process standards are essentially ignored. Phil Daro, a member of the Common Core Content Standards writing team, wrote that when standards are treated as checklists, “students are taught ‘standards’ instead of mathematics.” (Daro et al. 2011).

The mathematics standards identify what students should know and be able to do. But they do a lot more than that. Many standards begin with the word *understand*. Understanding—conceptual knowledge—is what ties mathematics together. The standards are grounded in a progression of learning and coherence of concepts. Mathematics is a discipline that builds on itself. For example, if students have a firm knowledge of the concept of addition of whole numbers, they can use that knowledge to develop an understanding of the meaning of addition of fractions. When the meaning of an operation is *understood*, it is much easier for students to retain how to perform it. In the mathematics standards, conceptual and procedural knowledge are joined together. Traditional standards focus on the “doing.” This becomes a problem when the “doing” pertains to the demonstration of low-level skills. Therefore, items written to traditional standards will focus primarily on “doing.” Items written specifically for the Common Core State Standards must accomplish more.

One part of the Common Core, the “Standards for Mathematical Practices,” describes the types of expertise that students should be developing throughout their mathematics education. An example of a practice that can be measured by traditional items is *Attend to precision*. However, that measurement takes us only partway there. The description of this practice also includes precision in mathematical communications, which has seldom been measured with traditional items. *Make sense of problems and persevere in solving them* is another practice. This practice is critical to preparing students to use mathematics in college and the workplace. Students must encounter items involving rather complex problem situations in order to develop this expertise. Scenarios with enough richness and depth to measure this

practice are seldom, if ever, contained in item banks developed to measure state standards. Students take tests, not item banks. In evaluating an item bank in mathematics, one should ask not only whether the items match the Common Core State Standards, but how well they match them, especially in terms of conceptual depth. Are the situations in word problems realistic; will they convey to the students that mathematics is actually used in the real world? In the “Introduction to the Common Core State Standards,” the authors write, “Mathematical understanding and procedural skill are equally important, and both are assessable using mathematical tasks of sufficient richness.” Are most items in the bank adequate to meet that goal?

Margaret Hill, Measured Progress senior mathematics advisor, stresses that “in most cases, just taking individual items in a test and saying ‘each item matches the content of a standard in the Common Core’ does not necessarily make a test that measures the Common Core. The spirit of the Common Core State Standards is different from that of traditional state standards. A test that uses existing items is unlikely to truly measure either the learning progressions underlying the Common Core content standards or the *Mathematical Practices* in an adequate manner.”

Looking Forward

We realize that much work must be done to bridge the gap. Measured Progress is not only building new items to match the Common Core State Standards; we are also looking at how the tests will be built. Our goal is to create rich items, also to build an integrated suite of assessment solutions for formative, interim, and summative use in measuring the Common Core State Standards. Such assessments will give classroom teachers the flexibility and customization capacity to improve student learning by informing instruction in real time. We are building a solution that is rigorous and responsive—rigorous enough to meet the increased demands of assessing the Common Core State Standards and responsive enough to meet the needs of the classroom teacher.

While we offer clients access to existing items correlated to many standards in the Common Core,

soon we will be able to offer a range of ready-made assessments that include new Common Core items that can be used for a variety of assessment purposes:

- **Teacher-created:** The teacher selects from one to any number of items based on instructional need.
- **Testlet:** A short collection of items designed to assess learning around a cluster or group of like standards; able to provide select information if using the default form.
- **Fixed Form:** A longer collection of items designed to assess learning of a broad set of content skills and knowledge.
- **Staged Adaptive:** Item sets of varying difficulty levels that are presented to students based on their performance earlier in the assessment.
- **Item Adaptive:** Items of appropriate difficulty levels that are presented to students based on their performance earlier in the assessment.

“The spirit of the Common Core State Standards is different from that of traditional state standards. A test that uses existing items is unlikely to truly measure either the learning progressions underlying the Common Core content standards or the *Mathematical Practices* in an adequate manner.”

Margaret Hill, Senior Mathematics Advisor, Measured Progress

While teachers will have the opportunity to choose items from an item bank, they’ll also have the option of administering pre-configured testlets that align to a set of standards. What is even more significant is that we are adding the flexibility to allow teachers to customize the pre-configured tests we build, so that if they only want multiple-choice items because of time constraints, they can omit the other item types. Or, if their instruction didn’t include one of the content clusters, items touching on that content may be omitted as well. All the while, we’ll provide information on how to maintain the technical

quality of the test to provide valid information. We're working to create a solution that will give teachers a base to work from that allows them to approach the Common Core flexibly, but coherently.

Constructing and providing a useful way for educators to use a variety of items—constructed-response, performance tasks, and other formats that allow teachers to evaluate student work—will better help them detect student misconceptions. While multiple-choice items can yield a great amount of information, they do not provide the complete diagnostic picture teachers need to boost student achievement. Teachers assess their students every day and need the right tools to guide instructional practices, particularly during a tremendous shift in our educational standards. We believe that a solution created expressly for that purpose does the best job of preparing students for the Common Core.

Simply reconfiguring our existing tests without regard for the goals included in the Common Core seemed disingenuous and contrary to the high level of quality that our users expect and we demand of ourselves. Measured Progress has chosen a different strategy for fully assessing the Common Core to best guide educators to help their students become college- and career-ready. This is because the standards have articulated higher expectations and end results. We're already hard at work to meet those challenges.

“ Simply reconfiguring our existing tests without regard for the goals included in the Common Core seemed disingenuous and contrary to the high level of quality that our users expect and we demand of ourselves.”

Stuart Kahl, Ph.D.

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