

Webcast From the Appalachia Regional Comprehensive Center at Edvantia

Data Use for Continuous Quality Improvement: Exploration of the New Tool

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John Ross

Moderator, The Appalachia Regional Comprehensive Center at Edvantia

Margaret Heritage

Assistant Director for Professional Development, National Center for Research on Evaluation, Standards and Student Testing (CRESST) at University of California, Los Angeles, Data Use Program Director for AACC

Ellen Osmundson

Senior Research Associate, National Center for Research on Evaluation, Standards and Student Testing (CRESST) at University of California, Los Angeles

Rebecca Cohen

Research Associate, National Center for Research on Evaluation, Standards and Student Testing (CRESST) at University of California, Los Angeles

Welcome and Introduction

[John Ross] Hello, and welcome to this webcast from the Appalachia Regional Comprehensive Center at Edvantia, what we in the organization refer to as the ARCC. Today's webcast is titled Data Use for Continuous Quality Improvement and is intended to highlight a free new online tool available to educators across the nation developed by the Assessment and Accountability Comprehensive Center.

If this is your first time viewing an ARCC webcast, you may be interested in knowing that the ARCC is part of the Comprehensive Center Network funded by the U.S. Department of

Education. The ARCC is one of 16 regional comprehensive centers and works in the states of Kentucky, North Carolina, Tennessee, Virginia, and West Virginia. The Assessment and Accountability Comprehensive Center is one of 5 centers that focuses on specific topic areas related to education in support of No Child Left Behind. You can find more information about the ARCC and the Comprehensive Center Network on the ARCC Web site.

We at the ARCC are very pleased to be collaborating with the experts at the Assessment and Accountability Comprehensive Center to bring this webcast to you today.

I'd like to begin by introducing our guests from the Assessment and Accountability Comprehensive Center who will be guiding us through the new online tool and how educators can use it to support decision making.

First is Dr. Margaret Heritage. Margaret is the Assistant Director for Professional Development at the National Center for Research on Evaluation, Standards and Student Testing at UCLA. Some of you may know of the center by its acronym CRESST. Margaret is the Data Use Program Director for the Assessment and Accountability Comprehensive Center.

Joining Margaret are two of her colleagues from the Assessment and Accountability Comprehensive Center. First is Dr. Ellen Osmundson, senior research associate. And with her is Rebecca Cohen, a research associate at the center. Welcome, everyone.

Educators have long used data for making decisions, but never before has there been more emphasis on the strategic use of those data to improve student achievement. Undoubtedly, much of this emphasis is a result of the federal No Child Left Behind Act, which introduced reporting requirements for schools in relation to the metric known as adequate yearly progress or AYP. Schools, school districts, and states now routinely gather and report data on student performance and make these data available to the public.

Educators who make decisions at every level—state, district, school, or classroom—have access to more data now than ever before. In fact, some educators may feel a bit overwhelmed by the sense of having too many data. Fortunately, educators also have access to tools that help them understand and use data to impact student learning in ways they couldn't even a few years ago.

The objective for today's webcast is to introduce a new tool developed by Margaret and her colleagues at the Assessment and Accountability Comprehensive Center and describe how that tool can support decision making at all levels of education. A link to that data tool is provided on the webcast launch page. (<http://datause.cse.ucla.edu/>)

Included in today's webcast are some visits to the Albemarle County Public Schools in Virginia where we'll hear about data use from a district administrator, a school principal, and a classroom teacher. We'll also hear from educators at the state level, including staff from both the Virginia and West Virginia departments of education, who will talk about data use efforts in those two states.

I'd also like to let you know that we will be providing an opportunity for you to present questions to our panelists later in the webcast. You'll do that by sending e-mail via the link on the webcast launch page. Get your questions ready, and you can send them at any time during the webcast.

But before we get too far, let's complete our first polling question. On the webcast launch page, please rate how strongly you agree or disagree with the statement, *Educators in my state, district, or school routinely use a well-defined process for collecting, analyzing, and reporting data to support decision making*. To see the most current responses, simply hit the Refresh or Reload button on your Web browser. We'll review your responses later in the webcast.

Margaret, an organized process is essential for helping make sense of the large amount of data currently available to educators. I believe you are going to describe such a process as part of your introduction to your new Data Use Web tool.

[Margaret Heritage] Yes, thanks, John.

Overview of Data Use Tool

The Data Use Web tool was created with three purposes in mind. The first was to show the key capacities that need to be in place for good data use to occur. We've presented these in a map that shows all the capacities and their relationship to each other. Here you can see a screen from the Data Use Web site that shows the complete view of the map.

All the capacities necessary for data use are drawn from the literature, and we thought it was important to show how they relate to each other and provide a foundation for using data effectively.

If you click on any of the capacities, you are given an explanation about it. We'll show you an example of what that looks like, using the capacity of Leadership as an example.

Currently, we are in the process of developing a tool that can help states, districts, and schools evaluate the capacities they have in place for data use and identify the ones they need to establish and/or refine. We plan to have that online in the near future.

The second purpose we had in mind for the Data Use Web tool was to present a process for using data. The idea is that capacities provide the foundation for this data use process. Here is a screen shot from the tool of the process guide.

We provide an explanation of each of the components of the data use process. The process begins with the user asking two crucial questions—what is it we want to know about the current state and what data do I have to answer the question? The process guides the user from that point through all the steps needed for making decisions based on the analysis of the data. This process can be implemented at all levels of the system—state, district, and school.

The third purpose for the Data Use web tool was to provide a framework for accessing resources related to data use. We have an extensive library on the Web site; users can access resources in one of two ways. They can click on a key capacity and then will be taken to a list of resources about the capacity.

So, for example, if you want references about leadership issues, you click on that element and you are taken either to PDF files or Web links about that topic. You can also access resources via a keyword search.

There are Five Anchor Capacities that provide the core of the map. They are:

Leadership

Quality Assurance

Infrastructure

Communication

Action for Learning

Today's webcast explores each of these capacities. If you'd like more information after today's webcast, you can also find further information about these key capacities and how they operate together in a mutually dependent and dynamic interaction on the Data Use Web site.

[John Ross] Thanks, Margaret, for setting up today's presentation. Before we dive into the first area, let's review our first polling question. We asked you to tell us how strongly you agree or disagree with the statement: *Educators in my state, district, or school routinely use a well-defined process for collecting, analyzing, and reporting data to support decision making.*

12% Strongly Agree

36% Agree

40% Disagree

12% Strongly Disagree

More than 57% agreed, which is really encouraging, and I think that kind of bolsters the idea that we really do want to have this process, so maybe some of those who were not in the 57% agreement might want to look to your Web site to find ideas about a process that will work for them. We'll have time for additional polling questions later in the webcast, but now, let's return to Margaret Heritage, who will begin with the capacity of leadership.

[Margaret Heritage] Thanks, John.

Leadership

Whatever the level of the system—state, district or school—effective data use hinges on having strong leadership in place that can provide both the momentum and support for data use.

The first job of education leaders is to establish the purpose for data use, namely, to inform programmatic, curricular and instructional, financial, and resource decisions with the goal of maximizing opportunities for student learning.

The next job is to create the conditions in which data use can effectively occur. Putting policies in place that support data use is an important component in creating the conditions. For example, policies that center on assessment use—data quality, integrity, and reporting—in addition to accountability policies.

However, policies alone will not lead to effective data use. A major role for education leaders is to marshal the community—whether at the state, district, or school level—to a collective sense of purpose about improving student learning and to having everyone in the community accept that data use *can* and *will* improve learning. To this end, leaders must establish the expectation that data use will guide decisions about programs, curriculum, and instruction, which of course involves modeling effective data use practices themselves.

Effective data leaders will help others develop respect for data by ensuring that those they lead do not feel threatened by data. They also have to ensure that there are structures in place in the organization so that there is time for people to collaborate around data analysis and careful decision making. Essentially, leaders need to create a culture where each member of the community will say that data use is a “way of life” around here.

[John Ross] Margaret, in preparation for this webcast, we were fortunate to be able to visit with some state department of education staff, as well as district and school leaders, in our region to discuss topics related to data use and to give us a better perspective of the uses, concerns, and roles of data use at different levels in an education system. Let’s share a bit of a discussion we had with Dr. Bruce Benson, assistant superintendent for student learning, in Albemarle County, Virginia. Dr. Benson describes how expectations and support for data use are created in his district.

[Video clip: Bruce Benson] We build capacity in our administrators and our teachers to use data to inform instruction and improve student achievement through a variety of means in our school division. We have a very unique teacher performance appraisal that really values the use of data and describes what that should look like on a continuum, in a rubric. It is designed to help teachers move along that path. We provide a lot of opportunities and access to professional development for our administrators as well, and that's also an expectation in their performance appraisals, in terms of the use of data to inform decisions and improve instruction in their schools.

[Margaret Heritage] Dr. Benson makes some great points. To get to a place where data use is a way of life means that there is sufficient capacity in the organization for data use—and by capacity I mean that the members of the community have the skills for data analysis and interpretation. Policies, expectations, and even a collective sense of purpose will not lead to effective data use by themselves.

Therefore, the leadership at any level of the system needs to provide opportunities to develop the skills of data use within their organizations. Such skills range from asking questions, to collecting the data, to answering the questions, to analyzing and interpreting data.

I mentioned earlier that you can access resources that relate to any of the key capacities—if you want papers or resources about data use skills and how to develop them, you can click on the skills and knowledge section of the key capacities map and find a whole range of resources on skills needed for data use. For example, there is a paper that I co-authored with a colleague from

CRESST based on our research that was published in *Phi Delta Kappan* in 2005, and there's a reference to a book by Nancy Love called *Using Data/Getting Results: A practical guide for school improvement in mathematics and science*. These are typical of the resources you'll find on the Data Use Web site.

Providing professional development on an ongoing basis is critical for making sure that everyone has the requisite skills at the level of sophistication needed to use data effectively. We're going to hear again from Dr. Benson about the kind of professional development that is provided in his district to support effective data use.

[Video clip: Bruce Benson] I think one of the things that we really try to focus on is keeping that professional development as close to the classroom as possible. There is not a lot of evidence that the workshop approach to professional development has much of an impact on changes in the classroom and how teachers work together, so we try to go for a job-embedded professional development both for our principals and for our teachers. And it is about looking at their data, looking at trends in their data, trying to determine if it's a curricula issue, an access issue, or an instructional method issue and making some changes in practice that [enable them] to see some kind of changes in achievement as a result of changes in practice.

Dr. Benson provides a great example of leadership in terms of helping build a culture of quality data use by incorporating job-embedded professional development—all the while keeping the goal of improved student achievement at the forefront. But leadership is not enough. All educators need access to quality data in order to make decisions that best meet the needs of

students. I'm going to leave it to my colleague, Ellen Osmundson, to provide the details about what that entails.

[Ellen Osmundson] Thanks, Margaret.

Data Quality Assurance

The second key capacity we've identified as critical to developing a culture of effective data use is "data quality." This capacity includes the important dimensions of data use that focus on the technical qualities of the data, the use of multiple measures, and the integrity of the data itself.

As you may well be aware, one source of critical information on student learning comes from state assessments, and state departments work closely with assessment developers to create high-quality assessments that meet high standards of **technical quality**. Great pains are taken to ensure that assessments are **valid** and **reliable** as well as **free from bias**, so that the data returned provide as accurate a picture as possible on how well students are learning required skills and knowledge—those described in state content standards.

This can be a huge job, but to provide the best quality data possible to students, parents, and educators at all levels, state departments have long been leaders in providing quality data. To get an idea of the steps states follow to provide high quality assessment data to their constituents, we visited Brenda West from the Assessment and Accountability Division in the West Virginia

Department of Education. Brenda describes steps her office takes to ensure that state-level data are valid and reliable.

[Video clip: Brenda West] We do several things at the state level to see that we have valid and reliable data and that it's accurate. One of the things we do is from our testing program. Once the tests are scored and the data is sent back, we get a, we call it a GRT file, and that comes back to Nancy Walker's office, the data management office, and they go through and they match that with the current files that we have. Frequently, if a student needs to have a test bio-gridded in instead of using the bar code label, somebody will accidentally get one number out of whack, so they will go in and do matching. We have a really good data match for our WESTEST scores. Another thing that we do is called a red team review. At the same time that the vendor is going through and checking for the accuracy of the results, we are doing the same thing here. They send us two sample counties, and they send us all of the reports. We have a checklist of things that we go through, and we look at that data to see that it matches.

[Ellen Osmundson] Districts, schools, and teachers at the classroom level can also take steps to ensure that the data are of high quality. The same constructs relative to technical quality apply at the district, school, and classroom level—valid, reliable, free from bias, and aligned to learning goals. But these qualities look different at different levels in an educational system.

For example, if a district uses a benchmark assessment in writing, it is important to take steps to ensure that people scoring the assessments use the same criteria to evaluate student work in the same way. At the classroom level, a teacher may remove student names from assessments to

avoid bias in evaluating student work. Additional information about how to ensure data quality can be found on the Data Use Web site in the section on data quality.

Data quality also implies that the data have **integrity**—that is, data that are accurate, delivered on a timely basis, secure, and accessible to appropriate stakeholders. This is just as important for states delivering the results of annual assessments as it is for teachers returning assessment results or providing feedback to students and parents on class work.

To ensure that data can serve the purpose of informing decision making, it must be accurately entered and maintained in forms that make the data accessible and usable to decision makers at all levels of the system. This involves care, accuracy, and timeliness in data entry. This is true of all data used for decision making, not just assessment data. Attendance, discipline, professional development, teacher certification and a full range of other data categories must be accurately entered and maintained. Accuracy in data entry can be accomplished by using a variety of strategies. For example, some states use a single portal. Data checking, by examining a portion of the data sample, is another effective strategy for ensuring accuracy.

Ensuring that data can be used for decision making also requires the establishment of procedures that allow users of the data appropriate access to information needed to make decisions. And safeguards need to be in place to protect privacy and prevent data corruption. Again, the Data Use Web site has links to articles and resources on how to establish safeguards and protect privacy on the Web.

Let's return to Brenda West as she discusses the state's perspective on timely delivery of data to stakeholders.

[Video clip: Brenda West] You can never get data back fast enough to suit most people. We do work with our testing contract people to get data back. We have some formative assessment programs where it is instantaneous feedback, the minute the student finishes the test. The teacher can get to that data and begin using it in a classroom to monitor student achievement, student progress—great formative assessment tools. We have been able to work with our vendor. Our writing assessment scores are back before school is out, actually, because it is given in March. We can get those scores back by the beginning of May and they can go back to students. It gives teachers a little bit of time to at least work with the data before those kids go to the next grade. With the main testing program, WESTEST and the APTA, the testing is so late in the school year, it's hard to get that back. And because we use constructive-response items, it takes a much longer time to score. So we are looking at issues around scoring, and we're always working with the testing vendors to get them to try to cut time off. We try to set deadlines to make it reasonable. Right now the main scores will be back in early August. I'm sure principals would like to have them back right now, but when you don't give the test until May, and you've got the constructive-response questions to score, it's going to take longer.

[Ellen Osmundson] The issue Brenda West just described—accurate scoring of more complex measures of student learning and reporting information back to state, district, and school personnel—is one of the many ongoing challenges with respect to using assessment data. Brenda

mentioned a couple of different assessment types in that clip, and that leads me to a final point about data quality assurance.

Learning is a complex process. As educators, we've learned a great deal about the complexity of learning from cognitive psychologists, learning theorists, and work in the neurosciences. We've also learned about the importance of collecting multiple sources of evidence to support decisions concerning student learning. Assessment data can tell us about student achievement, but we need other data to explore the reasons why students are getting the results they are getting—and there are numerous reasons for this ranging from attendance to opportunity to learn, to feelings of self-efficacy. That is why we need to go beyond simple descriptions of achievement to collecting data that can help us explore reasons for achievement levels.

The research makes it very important for data users to consider how to collect information that impacts student learning from a variety of measures, and bring them all together to have a clearer picture of how or why a student is or isn't learning. If school buses are routinely late and students aren't in class, it impacts learning. If students miss lunch or behave in ways that prevent them from focusing on instruction, it impacts learning. If students don't have access to high-quality resources or instruction, it impacts learning.

In addition, it is important to collect multiple measures of student learning. In a 2001 report, the National Research Council reported that “one assessment does not fit all.” Students engage in and demonstrate learning every day and in many different ways. Schools and districts need to

consider the many types of data and how they might be expressed in order to generate a better idea of what students know.

While this type of data collection can be somewhat daunting at a state level, let's return to Brenda West one more time as she describes how her state is considering ways to address the issue of incorporating multiple measures to get a more complete picture of student achievement.

[Video clip: Brenda West] West Virginia is looking at ways to bring multiple measures into the accountability system, not necessarily the No Child Left Behind accountability system, but certainly a statewide accountability system. We are looking at ways to bring in...our AYP test, our state accountability test, but also looking at scores from writing assessments, looking at ACT plan, ACT explorer, and other measures counties could use as benchmark assessment data. Although that is formative assessment, there is still data there they could look at to monitor improvement—different classroom assessment data; some states are using that, but we have not done that. We are looking at the Stigan's Model and looking for a balanced assessment system. We are looking at assessment *for* learning and assessment *of* learning. Those will bring in different systems under some of the new policies and new state laws. Dr Segal's office and the Office of Arts will be developing a new system where they will be looking at multiple measures to determine accountability and how much progress a state is making. You can't base proficiency on one test, one summative test at the end of the year. You can't judge schools on one test because they are doing so many things within the system.

[Ellen Osmundson] Finally, I'd like to reinforce that there are processes associated with using data that are related to the dimensions of quality data. It's critical that educators establish clear priorities and develop a thoughtful plan for the analysis and interpretation of the data that can lead to stakeholders making informed decisions. The process that Margaret described at the beginning of this webcast is one such way to establish those priorities and form a plan.

[John Ross] Thanks, Ellen, and thanks to Brenda West for sharing that great information about how a state strives to provide high-quality data for its educators. Rebecca, I believe you're going to describe an area that has seen a lot of action lately, especially in terms of new methods and tools for supporting data-based decision making, and that's infrastructure.

[Rebecca Cohen] That's right, John.

Infrastructure

Leaders need to make sure that in addition to creating the capacity for effective data use, and the access to high-quality data, that there is an infrastructure in place that supports data use. This involves strategic planning and resource management to provide appropriate tools, technical personnel, as well as the professional development mentioned earlier to increase system-wide capacity for data use.

Tools for data-based decision making include the computer hardware, software, and networking that comprise information systems to store, analyze data, and provide useful reports. These

systems can do many things, and we are seeing a wide range of them being developed across the country at both the district and state levels.

These education information systems help educators to store, organize, and access data in multiple formats. The data can come from a variety of sources, such as student and teacher demographic information, achievement data, and process and context data, such as the number of courses students take, curricular materials teachers use, or information related to teacher professional development. Just as Ellen mentioned earlier, educators need more than access to data from state assessments.

As a system, these tools may be developed by and maintained at different levels—state, district, or school, and each provides critical data. This information system may combine data from state and district resources, such as statewide test results and demographic data stored at the district level. They may also store longitudinal data, which is data sampled over periods of time, such as the student performance data over multiple years.

At the local level, these systems can be used to help create master schedules and can be used to organize and report attendance, discipline, and academic data. No one person or group can provide all the data necessary to make truly informed decisions about improving student achievement. Educators at every level play a part in generating, reporting, and analyzing a range of relevant data.

The analysis and reporting functions of these systems are becoming simpler to use, and many can provide complex reports with the click of a button. These reports are also made easier to read through the use of graphs, tables, and other formats, whether you're looking at individual or group performance.

Let's listen to two perspectives on infrastructure, one from the state level and another from a district point of view. Brenda Williams is the executive director of the office of instructional technology for the West Virginia Department of Education. She provides insights on the state's robust data infrastructure for educators in West Virginia.

[Video clip: Brenda Williams] West Virginia has been very fortunate for infrastructure in the state to analyze data and to use as instructional tools. Number one, we are a small state; two, we have eight regional education agencies and only 55 school districts. So, with legislation as early as 1989, we have had a statewide infrastructure that provides for a total MIS system. With that system not only comes what you think of everyday that happens in schools, but every school is connected [and] able to access web points and other data points so that they will have information at their fingertips when they are trying to make their decisions.

[Rebecca Cohen] That was really helpful information, but as we mentioned, a state cannot provide all of the data nor the infrastructure that districts and schools need. Some of the infrastructure demands fall on the district and school. Let's return to Dr. Bruce Benson from Albemarle County, Virginia, who describes the infrastructure that is in place in his district to support data use.

[Video clip: Bruce Benson] We have a very robust wide area network. Our county spans 740 square miles. All of our schools are tied by a gigabyte backbone central data center, which also provides access to the Internet. Extremely reliable, the system is virtually never unavailable to folks. And we also have a very capable, well-staffed technology support department that is very good at resolving any technical issues in terms of use of those resources. In terms of tools that are available out in the schools, we have a student information management system that provides access to a fair amount of data. We have shared and places on the network where folks can access their school-level data for analysis. What we are looking for next is really taking that access right to teacher desktops in our division. We are in the process of customizing an application that we'll be rolling out in the fall that will do just that—providing not only access to lagging achievement data but also support assessment during the course of the school year such that we can see how we are doing quarterly; access to curricular resources that are aligned to our standards; and high-quality assessment items that go after Virginia standards but also our own local standards in a means that look like some of our SOL tests but then again go beyond that with high-quality open-ended assessments as well. I think the most important thing is that you need to keep that big picture in mind in deciding how it is that you are going to use data—how you are going to support that data use; how are you going to make sure that technology is used to enhance instruction across the division—that you need to make sure that you are paying attention to the people side of it, that you have folks that can support the technology that understand how to use the applications and look at data and make some connection to practices. At the same time, where folks make the biggest difference is in classrooms, and in this division, it is very important that the teachers in the classroom and building administrators have input in that

process. I think that is what is great about Albemarle County Public Schools—we have a very inclusive process for identifying needs in the division and involving folks in helping us figure out a solution. And so when we go out and we have identified some shift in practice that we think is necessary in order to raise the level of achievement in the division, we have, in most cases, broad support to do that. And we have classroom teachers that can speak to why this is an important thing to do, building administrators who can speak to why this is an important thing to do, and central office support staff. And I really do see the work that we do at the division level as kind of supporting the line, which is what is going on in classrooms across the division. So I'm pleased that I think we are very much on the same page in our school division about what it looks like to use data to improve student achievement.

[Rebecca Cohen] Dr. Benson mentioned the technical support that is available in his district, and this is a crucial part of infrastructure. End-users of data, including administrators and teachers, need support from technical personnel to ensure that data systems are functioning effectively and can provide them with access to the data they need. In addition, educators at all levels require encouragement, training, and support to use data to make decisions.

Often a dedicated individual at each level of the educational system serves as the "data champion" involved in promoting data tools, ensuring buy-in, and gaining feedback from stakeholders to guarantee that tools meet organizational needs.

In addition to the tools and technical personnel required as part of the infrastructure, knowledge and skills are also needed for data use. Educators at all levels need the knowledge and skills to

understand and use technical skills. These include data management, cleaning, verification, as well as error detection skills, and knowledge of how to configure queries to determine likely “what if” scenarios.

Margaret introduced some of the data skills educators at all levels need, and we again stress the importance of having the skills to draw appropriate inferences from the data and to translate this information into action for learning. This is a critical step in the process that many educators have difficulty with—translating that data analysis into action. We’ll talk about that critical step in more detail later on.

On the Data Use Web site, you will find articles on building an effective infrastructure, as well as criteria to consider when selecting data tools.

[John Ross] Thanks, Rebecca. Let’s stop to consider our second polling question. This one’s about infrastructure. As Rebecca mentioned, no one entity can provide all of the data or infrastructure educators need to make informed decisions about student achievement. As you consider the schools you normally work with, let us know the level at which the strongest infrastructure for quality data use exists. *Does it exist at the state, district, or school level?* We’ll return to these poll results later.

Now, let’s go back to Ellen for some information on the importance of communication.

[Ellen Osmundson] Thanks, John.

Communication

The goal of communication is to build support among and between different stakeholders at different levels in the educational system. Communication regarding data use has many critical aspects and pathways.

Communication of goals matters to students and teachers, as well as other school, district, and state personnel to generate buy-in and commitment. It's also critical to communicate progress toward these goals, to let involved parties understand where they are currently situated, and where they need to go to achieve success.

[John Ross] You know Ellen, as a former classroom teacher, I know that at the school level, the principal often serves as the main communicator both within the school and between the school and the community, district, and elsewhere. While visiting Albemarle County, I was lucky enough to speak with a great principal, Kathryn Baylor from Jack Jouett Middle School. She did an excellent job of describing the ways in which information about student performance is communicated with and beyond her school.

[Ellen Osmundson] That's right, John. It's critical that various stakeholders—state, district, teachers, and parents—are provided with information about student learning to both evaluate current progress and success and to guide future instructional planning. Kathryn Baylor

elaborates the importance and need for communication of student achievement results to support appropriate and timely decision making.

[Video clip: Kathryn Baylor] We report our data to the state through SOL scores. To my knowledge, that is the limit to what we do with the state. The state reports back to us if we are not meeting standards. So if we are not meeting accreditation or AYP standards, we learn that—which categories we might be low with children. But that is a communication piece that is just straight to the state, then back to us. As far as the district, we report our data to our superintendent and a committee of people at mid-year time and with that, we report how children are mastering in reading and math in our school. We report out the data that demonstrate what we are mastering as a whole school, at each grade level, and then by each separate population. At that time, our superintendent expects us to figure out an action plan to make sure all children are mastering the material. As far as communication to teachers regarding data, the assistant principal and myself set expectations for the staff, and I'll give you some examples. For example, in language arts, we expect that they will create common unit assessments and, in turn, they will break that data down and analyze it and report back to the assistant principal and myself how the kids did. Then they need to determine how they are going to spiral back over that material that the kids did not get the first time around, and continue doing that until the kids master the material. Generating buy-in for the teachers—I think the teaching community has been isolated in the past and actually prefers working with other teachers. It is just such a big paradigm shift for teachers. At first, there is reluctance, but those concerns go away, as you start dividing out the energy, dividing out the jobs. They are going to pull together, knowing that what you are doing is best for the kids, versus thinking that your isolated classroom is best for kids. So

the buy-in for the common unit assessments—there are concerns, personality differences, things like that occur. But once people started doing it—since they had to turn it in—once people started doing it, the buy-in has actually been more genuine than forced by me.

[Ellen Osmundson] Data use to support and improve student learning requires the clear communication of policies, expectations, and results. The communication of information about assessment data can contribute to building shared understandings, and fosters a sense of involvement that leads to better and more informed decision making.

Educational leaders rely on stakeholder input and feedback to inform their decisions. Effective educational leaders understand the value and importance of collaboration and shared responsibility in the decision-making process.

Let's turn now to communication from the perspective of a state leader. Bethann Canada is the director of educational information management at the Virginia Department of Education. She discusses an advisory group that is composed of state-level assessment as well as school district personnel. This collaboration is designed to promote the regular exchange of information and ideas to inform decisions about the kinds of data that are needed, and the ways in which results from assessments can be reported to stakeholders.

[Video clip: Bethann Canada] One of the most important things we do and the most meaningful relationship we have is with the collaboration within our districts. When we first began to collect individual student records, we established an advisory group of school districts that actually took

the project over and told us what we needed to collect. That relationship has continued and they continue to advise us on how to improve their data systems, as well as how to improve the services and support we provide them.

[Ellen Osmundson] The cyclical model of communication Bethann describes is a good one and can be implemented at all levels in educational systems, not just between a state and district. A similar collaborative model could also exist between school leaders and the district, or classroom teachers and school administrators.

Bethann also alludes to another essential component of communication in data use—that of reporting progress and results to stakeholders in the system. The criteria for reporting data in effective ways include reports that are understandable to all constituents, information that is clearly presented in a format that leads stakeholders to good understanding of the information, and that ultimately supports good decision making. Visit the Data Use Web site to find suggestions for effectively reporting information to stakeholders, including a set of guidelines from the U.S. Department of Education on information quality.

Report formats may differ depending on the audience, but the message is clear: reports should be understandable and facilitate decision making. Bethann Canada provides some more information about the data reports and the role that technology plays in Virginia to support data reporting.

[Video clip: Bethann Canada] Many people are now exploring how their business processes support efficient and productive decision making. For example, a district may form a committee

of data users that talks with the technology department, who then improves the reports that they receive in the school building and the classroom. Just that little bit of communication can help us improve our effectiveness using data.

[Ellen Osmundson] Reporting information to stakeholders in ways that are understandable, clear, and easy to understand allows stakeholders to be involved in the decision-making process based on evidence of student learning, rather than on a less obvious, less clearly established set of criteria. It helps people stay more objective and may reduce reacting to emotions or personal positions. Reporting data clearly can actually build community and collaboration around shared goals.

The importance of stakeholders working together to reach common understandings is both a goal and a by-product of effective communication. In this final interview, Bethann Canada discusses the ways in which the state of Virginia is collaborating with various stakeholders to make decisions involving student learning. She points out the challenges involved with the data use process, and reminds us all of the importance of using data in meaningful ways to help understand where we are with respect to student learning and where we need to go.

[Video clip: Bethann Canada] I'd like to think that NCLB and accountability in general has given us a great excuse to use data for effective decision making. NCLB, in requiring huge amounts of data for accountability, then puts that data in the hands of other people who can use it for decision support. There is more data to look at besides what the state wants to collect for accountability—just the state test results, then we can talk about the kinds of operational data

that are uploaded day-to-day—for example, how many teachers are absent today, how did we do on the 9-weeks test, are there discipline problems in a certain location in our school this month? Those types of operational data are used day-to-day by building administrators and really don't belong at the state; it would probably be impractical to collect that type of data. But historical data, however, is something that the state can easily provide so that we can look back over time and see if our third graders have improved in math. We can see if there is a particular group of students in our school that needs more help, or if a student coming into the fourth-grade class needs help in a specific content area, even down to what we call the reporting category.

[John Ross] Everyone has a role to play in analyzing and collecting that data. Thanks, Ellen, and thanks as well to Bethann Canada and our leaders from Albemarle County. It's great to hear how educators at every level are putting these strong practices into action.

Before we visit the last key capacity that anchors the organization of the Data Use Map, let's view the results from our second polling question.

We asked you to select the level at which the infrastructure for quality data use is strongest: state, district, or school. According to your responses

57% state

38% district

5% school

Now let's delve into the final capacity.

Action for Learning

[John Ross] All of these components are critical and are dependent upon each other. But no matter how much emphasis we put on these components, there's one that is the ultimate point of data use, which is taking action for improved student learning. Margaret, I believe you're going to help us better understand this most critical component.

[Margaret Heritage] That's right, John. Data use and data-based decision making are worthwhile endeavors only if they result in positive action for learning. Without this action, data use really has no purpose.

The kind of action taken for learning will be dependent on the level of the system in which the analysis takes place. For example, at the district level, analysis might result in action that specifically focuses on schools where performance on district-level achievement tests is low.

At the school level, action might center on a specific area of the curriculum in a grade level where student results show little improvement.

At the classroom level, teachers will take action to make pedagogical adjustments during the course of instruction when data analysis shows that students have not understood the content of a series of lessons.

Chad Sansing teaches eighth-grade English at Jack Jouett Middle School in Albemarle County. He shares a teacher's perspective on the use of data to promote action for learning. He finds the data from classroom assessments to be the most helpful for taking action for student learning. Let's hear what he says.

[Video clip: Chad Sansing] Well right now, the data most useful to me in the classroom actually come from classroom assessments. But they're not necessarily assessments taken from the back of the book; or found online or borrowed or kept. I've done a lot of work to unpack the state standards and to match them up to against what I think students need to have before they leave my room. The standards now are an amalgam of how they need to perform on standardized tests coupled with what I think they need to have beyond that bare minimum. We have things that are fairly simple. For example, we will do reading fluency; we will take a words permanent count against grade-level text, and that gives us an idea of where kids are with the decoding, at least. Then we'll have reading comprehension tests, after class text. And those will be built on the state's standardized tests, or SOL blueprints. The questions, though, have different tiers. We will use Bloom's to get away from knowledge and comprehension. So they will have the same proportion of questions from the reporting categories that they have to deal with on the state test, but we try to go up-and-down Bloom's more than the state test does. Because there is so much conscious decision-making going into the design of those assessments, they are very easy to disaggregate. So we can get a lot of data back about whether the kid is having trouble with, let's say, explaining figurative language, but they can identify it fine—I know what a simile is, but I can't tell you what the simile is to the character. We can get down to that in a little detail through classroom assessments.

[John Ross] You know, Margaret, it was great to visit Albemarle County and visit all those educators at each level—classroom teacher, principal, and district administrator. No matter whom we spoke with, that message of using data to impact student achievement came through loud and clear. It is definitely a priority for educators in this system.

[Margaret Heritage] Yes, John, whether at the state, district, school, or classroom level, before action for learning can take place, priorities for improvement need to be identified from the analysis of the data. But there is a caution taken from educational theorists Michael Fullan and Andy Hargreaves who advise that too many priorities are the enemy of improvement. If you're not familiar with the work of Fullan and Hargreaves, you can find several articles by these authors referenced in the library on the Data Use Web site.

Once the priorities have been identified, then action that focuses on the priorities needs to be carefully planned. In the process we are describing today—the process that is part of the Data Use Web site—this plan is a transformation plan, and it is the mechanism through which improvement occurs.

The transformation plan should clearly lay out the desired results for student learning and targeted strategies for achieving these results. It's not just having a goal, but really mapping out the steps you'll take to achieve that goal. The plan should also outline how the strategies for improvement will be monitored and evaluated so you'll know whether you've achieved your goals or not. Naturally, this will involve identifying the kind of data that will need to be collected

and analyzed to keep the plan on track, or to make adjustments to the plan if it is not achieving the desired results.

Before we finish up with these descriptions, we're going to hear again about the infrastructure built in West Virginia to support transformation planning. This time, we turn to Sarah Lyons, technology coordinator for the Office of Instructional Technology at the West Virginia Department of Education. Sarah has firsthand knowledge and experience with working with school and district leaders in developing school plans—plans that are now created online across the state.

[Video clip: Sarah Lyons] In West Virginia, all schools and counties have access to the online strategic plan. In the online strategic plan, they set their goals, they write objectives, and then they articulate an action plan and how they want to work on improvement. First though, what they need to do is look closely at data. There is a data analysis section where schools can go in, or counties can go in, and drill straight to the WVCIS data. Let me give you an example. Let's suppose that schools want to look at their school attendance data, or they want to look at their achievement data, and they want to break it down by cell groups. Since schools can pull up their data through the online strategic plan, click on whatever it is they are trying to focus on—whether it be attendance, the graduation rate, the achievement rate by subgroups—they can draw straight in at that, look at the data, and then make conclusions on what they need to articulate their action plan for the year. It's a very powerful tool because, rather than using the traditional planning method that we used to have in West Virginia—when you would have to bring piles of paper in and set them up on a table, and go through reams and reams of a paper trail—now [with]

the online plan, at the click of a mouse they can connect straight through to the WVIS student data and make more informed instructional decisions.

[Margaret Heritage] Action for learning is a continuous process—data collection and analysis lead to the transformation plan—and the implementation of the plan leads to further data collection and analysis, which in turn lead to new targets for improvement. This cyclical process is the hallmark of data use as a way of life.

The Data Use Web site is intended to help educators get to the point where data use *is* a way of life—the key capacities map, the data use process, the library, and the criteria for selecting data tools all focus on the “how to” of effective data use.

I also wanted to mention that in addition to these tools, we also have criteria on the Data Use Web site for selecting and using diagnostic assessments, and we have just rolled out professional development around the criteria. In the near future, we’ll have the inventory for determining how well the key capacities are in place on the site. And the next focus of work for the data use strand of the AACC will be formative assessment. So watch out for information about those upcoming tools.

Questions and Answers

[John Ross] Thanks Margaret, that is really great. We have been presenting a lot of information. We’ve had some great clips, but now is the time to answer some questions we received from the

audience so far, from the e-mail form on the Webpage. You can always send some more if you'd like to, but we are going to start off with a couple to get the panel rolling. I think this is one that is typically asked when we work with schools.

(Question 1) Does this process apply to teachers? We have heard a large range of people talk today, but how does this look for teachers versus administrators or others?

[Margaret Heritage] We think the process does apply at all levels, whether it be administrator or teacher. I think there are two things that will differentiate the process for these two groups. One, the questions are going to be different. For example, the administrators are going to want to know how well students are meeting standards; they are going to be able to determine professional development resource allocations based on that. But teachers are going to want to know, in a much more fine-grained way, how students are progressing in their learning on a day-to-day basis. So they are still going to ask questions; they are going to collect the data, but the questions are going to be different. The kind of data they collect will be different, but not only that, but the level of specificity and detail about learning in the classroom is going to be very different from an administrator looking at data, who will look at it from a much more managerial, supervisory kind of approach. Yes, more holistic.

[John Ross] That makes sense.

[Ellen Osmundson] I also think, if you look at the data use process, that the notion of communication may be different for classroom-level teachers and administrators, but the notion

is still the same. It's important to be communicating information about student progress, about how things are going in the classroom as well as at the school level. So the audience, in part, determines the kind of information that is communicated. Both administrators and teachers are responsible, or should be responsible, for communicating that information.

[John Ross] And I think we remember that second polling question, which reported that schools had the lowest—maybe not the strongest—infrastructure reporting and collecting data. Maybe that is why this question came about. What does it look like for teachers?

(Question 2) Speaking about applications, earlier, Rebecca, I think you talked about the different types of applications that can support it. This person has asked about recommendations for software applications to support data use. And there is just so much going on now that maybe we can just get some broad guidelines as to what to look for.

[Rebecca Cohen] Yes, John. There are a number of applications for information systems available in the marketplace. A lot of schools, districts, and states are even developing their own to suit their own individual needs. We do not actually recommend a particular system, but what we would like to do is refer the audience and anyone interested to our Web site where we have a number of criteria for selecting these data tools.

Individuals and administrators can go through and take an inventory of what their specific needs are. Some of these criteria include capacity for longitudinal data to make sure that these systems can really handle a lot of data over a period of time. Also, we think it is really important that the

reporting is in very understandable formats for a variety of users. And interoperability is very important so that the information systems that individual schools have can also work well with those in the districts and states, etc.

[John Ross] I do have to say that we are working with states at the Appalachia Regional Comprehensive Center (ARCC) that have statewide data systems, and it is a constantly changing field. It is constantly evolving, and, just as Bethann Canada talked about—the fact that they are asking districts and talking with districts, and districts are providing feedback—some districts are providing their own tools. I know from working with Bethann that she’s a big champion of the Schools Interoperability Framework (SIF), and schools should be cognizant of this idea—that there are protocols out there that allow different systems to talk to each other. So if you are not familiar with SIF, you may want to look into it.

[Margaret Heritage] The other point that I would like to add is [related to] our experience with CRESST and developing the Quality School Portfolio, which is a support tool. I think districts, and even states, will get a tool that meets current needs. We can’t stress enough the importance of thinking about increasing capacity. As people get more sophisticated about data, they want different kinds of data, they want to be able to analyze different sources of data, a lot more sophisticated analyses that people want to do. So in selecting tools, I think that’s important to think about, not just the here and now, but what is this going to look like a few years out.

[John Ross] And it may be even focusing on a specific capacity level like communication. That is an easy way for a lot of schools and districts to get into the idea of moving into a software-

based application. Communication, where teachers can actually report grades or even comments to parents and they can ask questions in a secure environment, that may be one way.

(Question three) [Margaret Heritage] I was just going to maybe go back to one of the other questions we had—does the Web site address different types of assessment? I think that's something to think about when implementing some kind of data tool that, as Ellen talked about, we are very interested in having multiple measures, access to multiple measures for student achievement, and these can include, for example, electronic portfolios. Quite a number of data tools now have electronic portfolios where you can put in all kinds of different artifacts that represent student achievement—from video, audio, scanned work samples, and so on. So we are not just talking about a single kind of a test, but a whole range of information sources that can contribute to a much broader picture of student learning.

[John Ross] Some of the other data we've talked about—Ellen brought up the fact that if the school bus is late, the students aren't in the classroom, and they don't have the opportunity to learn.

[Margaret Heritage] And that can have serious impact.

(Question four) [John Ross] It might be from a teacher and I think that after having gone back to school and having gone through statistics class, and trying to remember what validity and reliability mean, I can understand. The question is: Do all the data we have, do they have to meet the technical standards we discussed?

[Ellen Osmundson] I will take a stab at that one. I'll just answer that by saying yes. Of course the specificity, the technical qualities of assessment are going to vary depending on the needs of the user. But I think that one of the important points to remember is that technical considerations about the kinds of data that we are looking at have an impact on the kind of decisions that you are going to be making. So if we are talking about a classroom decision for tomorrow—about how I am going to structure groups, the way that I am going to ask students to read text, whatever the assignment is—that is a lower stakes decision so the technical qualities of the data [can reflect that]. It's less important to have absolute, have the technical quality be really high, if it's a lower-stakes kind of decision. On the other hand, if we are making decisions about whether kids are going to finish high school or be promoted to the next grade, you want to really focus in on the quality of the data and make sure you are looking at data that are reliable, valid, and free from bias.

[John Ross] That is really important, and what I'm hearing is that the more critical the decision, you really have to take greater steps to make sure the quality of your data is higher.

[Ellen Osmundson] That's really true.

[Margaret Heritage] That's certainly the case, but I must also add that this is an important consideration at the classroom level as well. Teachers who are assessing the students need to be clear that the strategy or the kind of assessment they use is appropriate to purpose, and not try to get a certain kind of understanding with the wrong kind of measure. That is really important and

also, as Ellen and I have talked about a lot, they need multiple sources of information—you're not going to make a decision based on one single source of evidence about learning.

[Ellen Osmundson] We call that fitting the tool to the task, so you are collecting the right kind of data and the right kind of information to provide evidence about student learning or whatever the issue you are interested in investigating or researching.

(Question five) [John Ross] Margaret, you have changed my mind. I was going to ask this one question, but we did a question about the fact that teachers and educators kind of seem overwhelmed by all the other current obligations they have. How can I find time to work with data in addition to all of my other responsibilities?

[Margaret Heritage] Well, to me, there's just no choice that you have to find the time, because unless you're clear about student achievement and the factors that might be contributing to student achievement—so you get a really clear picture of what is going on for the school as a whole, grades, individual kids in classrooms and so on—then it's really not possible to provide the best kind of program for the students. So, I mean, admittedly, it's literally that it's easily said that it's not a choice, but I think that's pretty clear that we need to be more evidence driven in education than perhaps we have been up to this point. I was earlier talking about the importance of leaders and the leadership in data use and, really, it's the job of leaders to find and put those kinds of structures in place: regular meetings, about time. You know, there are lots of different ways that schools and districts have done this, but I think there is only so much of the cake that you can cut; but leaders have to be creative about how they are going to deploy that time.

Frankly, some of the time that's spent on busy work could be better spent on thinking about data, examining data, and having a dialogue about what these data are telling us.

[John Ross] You know it might even be about having a dialogue with other leaders in your district or leaders who have schools like yours.

[Margaret Heritage] Yes, exactly!

[John Ross] Or if you're a high school on a certain kind of scheduling and it's new to you—talking with other schools who do that: How do you get shared team planning time if you're on an A/B block or on a different kind of block?

[Margaret Heritage] Everybody's trying to figure out these problems, and the more that we can share ideas the better. You know this is a common story that we hear all over the place: *You know, we just don't have enough time.* So we really have to prioritize our time and focus it on where it really counts.

[John Ross] And I have to say from visiting schools—and not just these schools, but having developed data training with the schools that are really making gains in terms of using data—that they have really formed this culture of quality data use, this idea of building a culture that really uses that data, and so they think about these structures as teams. They are *all* our students and we have to work together to look at the data to help all of them.

[Margaret Heritage] It's everybody's responsibility. You know, becoming a way of life.

[John Ross] You know, so that's very encouraging.

[Ellen Osmundson] I would like to add one other comment to the notion of developing capacity for data use and that is, as we work together to develop—at the classroom, district, and state levels—our capacity to analyze and interpret the different kinds of data sources, I think it's a process. You don't go from not doing it at all to doing well and perfectly overnight. It is critical to involve collaboration, and it is a process that people take to become more skilled and more analytic in terms of their ability to analyze and interpret data and make good decisions based on that data.

[Margaret Heritage] That's sort of what you found, Rebecca, in all of the research you've done on this, that it's not something that's going to happen overnight.

[Rebecca Cohen] I think if users are interested in the starting point, they can look at our resource library and really get a sense of what other districts and other schools are struggling with and some of the problems and practices they've discovered.

(Question six) [John Ross] That really addresses the question that I had next about how does a small school district do this? I think there was some concern about cost and I think some of the points you're making, and Bethann has made, and some of the others have made, is that the costs are distributed because there have to be strong leaders. And where do you get strong leaders—it

is not that you go out and buy a strong leader, and it's not that you go out and buy your complete system, so that cost is distributed.

[Margaret Heritage] The other thing, though, that I wanted to mention in relation to that is some of the work that we've done at CRESST in looking at data tools. We've seen a lot of small districts get together in consortia where they are really able to share their costs. They buy one set and they have one technical person so they get together. I've seen this in Michigan, for example; New Mexico has examples of that. So, where there are small districts, I think it makes a lot of sense to really come together and distribute costs across the districts.

[John Ross] Sounds like a new part of the tool that you need to have—some kind of collaborative environment for some of these schools and districts to get together.

[Margaret Heritage] That's a good suggestion.

(Question seven) [John] Well, speaking of that, I'm going to finish up with one more. I think we might take the last call-in question off line because I know we're going to go a little long. What are some future plans that you have for the Web site?

[Margaret Heritage] Well, we have a number of plans. One of the things that we want to do in terms of what already exists on the Web site, we want to make it more of a multimedia environment. Say, for example, we want to have video clips of people talking about practices in

relation to different aspects of the content of the Web site. We're hoping to have examples of classrooms, of teachers, of administrators, and so on.

We're also—in the next year, in addition to the inventory I talked about—we're focusing on formative assessment next year, which is a hot topic out there. A lot of the focus of our work is going to be on formative assessment, really helping people understand what it is and the best practices around formative assessment. We're also collaborating with a couple of different regions to develop professional development for formative assessment, and that we hope to be in an online environment. That's our big next steps for the Web site.

[John Ross] Great! I do know that every conference I go to, formative assessment comes up as a big discussion. We've gone a little long, so I'm going to just take some time to thank people—especially Margaret, Ellen, and Rebecca—for being here and preparing for that.

[Ellen Osmundson] Thank you, John.

[John Ross] They do represent the Assessment and Accountability Comprehensive Center and I want to thank them for sharing their time with us today. Please do take time to visit the Data Use Web site. I know it was probably hard to see some of those tiny screens on the webcast, but you can go and visit the Web site and click through some of the information you've seen today. I think it's going to be a resource you're going to want to go to time and again because, as Margaret says, "It's going to evolve over time."

I really also need to thank the educators from Albemarle County Schools in Virginia, as well as our state educators: Bethann Canada from the Virginia Department of Education; and Brenda Williams, Sarah Lyons, and Brenda West from the West Virginia Department of Education. On the webcast launch page, you will find the link to an online evaluation survey for today's event. Please take time to fill out that survey because we actually use that data, model that practice. We actually use that data from the evaluations to plan these events and other events. Thanks for watching today. To view this webcast again, please visit the Events Section of the ARCC Web site where this webcast will soon be archived, in a day or so. For the Appalachia Regional Comprehensive Center at Edvantia, I'm John Ross.