NATIONAL INSTITUTE FOR URBAN SCHOOL IMPROVEMENT

MODULE

2

Mining Data

Academy 2 v.1: Identifying School-Wide Patterns of Student Performance

Facilitator's Manual

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National Institute for Urban School Improvement

The National Institute for Urban School Improvement (NIUSI) is funded by the Office of Special Education Programs at the U.S. Department of Education. The mission of NIUSI is to support the building of capacity in urban schools and school districts so that students with disabilities are engaged in high quality curriculum and learning experiences that improve their ability to succeed in school and in post-school opportunities. NIUSI works to develop powerful networks of urban local education agencies and schools that embrace and implement a data-based, continuous improvement approach for inclusive practices. Embedded within this approach is a commitment to evidence based practice in early intervention, universal design, literacy and positive behavior supports.

Part of NIUSI's work is to link existing general education reform networks with special education networks and we also synthesize existing research into products that are made accessible in both print and electronic versions. These offerings support the efforts of professionals, families, researchers, advocacy organizations and others involved in the work to create culturally responsive, inclusive school communities.

NIUSI Goals

One of the main goals of The National Institute for Urban School Improvement is to work collaboratively with educators in its partner districts in the area of professional development. This work is grounded in the beliefs that professional development must:

- Address specific needs of states, districts, schools and communities with a focus on helping students achieve learning and performance goals.
- Be a collaborative endeavor with teachers, administrators, families and students involved in the design, planning and or implementations.
- Rely upon content and processes that are research-based and proven in practice.
- Be school-based, job-embedded, and continuously evaluated and adjusted to ensure effectiveness in meeting school and student learning goals.

Leadership Academy Model

A strategy through which NIUSI helps educators develop leadership skills for school change is through the Leadership Academy model of professional development. In collaboration with schools and local universities, NIUSI creates these Leadership Academies for preservice and in-service activities. The approach includes careful consideration of the content for professional development, adult learning principles, and selection of teams from schools and districts that can support their team members' learning and practice. In this way, professional development can build on converged needs, create a sense of common purpose and extend the creativity and skill of practitioners. Specifically, NIUSI works with urban school districts to build information systems that assist leadership teams to focus on goals for instructional, curricular, and cultural improvement and for empowering action research agendas among school professionals.

All academies are based on the National Institute's assumptions that great schools:

- Use the valuable knowledge and experience that children and their families bring to school learning.
- Expand students' life opportunities, available choices and community contributions.
- Construct education for social justice, access and equity.
- Build on the extraordinary resources that urban communities provide for life-long learning.
- Need individuals, family organizations and communities to work together to create future generations of possibility.
- Practice scholarship by creating partnerships for action-based research and inquiry.
- Shape their practice based on evidence of what results in successful learning of each student.
- Foster relationships based on care, respect and responsibility.
- Produce high achieving students.
- Understand that people learn in different ways throughout their lives; great schools respond with learning opportunities that work.

Professional Development Modules

Systemic school change is a complex and difficult task. The challenge is great, but educators throughout our nation and other nations are actively engaging the opportunity to transform education and how we go about the work of teaching and learning in our schools. This module is

one of ten developed by NIUSI to assess networks of schools engaging their faculty, staff, families, students, and community members in ongoing renewal and systemic change.

Every module is designed with three academies that build knowledge, skills, and practices clustered around particular aspects of school wide improvement. The intent is simple: Build a common vision, vocabulary, and skill set around essential elements of school improvement. The best way to implement this module is to bring together building leadership teams from a cluster of schools so that teams can learn from one another, and create a practice community that can support innovation. The academies should be offered in sequence from academies 1 – 3. Space the academies about four weeks apart, so that some application can occur between sessions. Make sure that there is a plan for coaching on site between modules.

Why Data Mining?

Notice the number of times that data and evidence appear in NIUSI's principles. Saying that teachers, families and administrators need data to make decisions is one thing, understanding and using data well is another. In fact, few teachers and administrators have been educated in programs that have focused on making meaning from data and then using those analyses to guide school improvement and classroom instruction. This module is designed to help building leadership teams learn the skills required to mine data and use it to make decisions. As principals and teacher leaders become confident in their ability to query their data, they will become strong role models and coaches for the entire faculty.

In this module we take a serious look at understanding and using data and other evidence of student performance to improve student learning. Participants will consider a variety of measures of academic performance by asking tough questions about data such as: What do students need to know? How will we know if students have learned it? What will we do if students have not learned what they need to know? Working steadily and continuously as a team, school faculty and administrators can become successful with all, not just some, of their students.

Leadership Academies

The goal of all Leadership Academies is to create a network of skilled and knowledgeable teacher leaders, administrators and family members who will serve as effective agents of change. The participants are predominantly teams of educational professionals from schools and/or districts who are organized to advance the knowledge and practice related to systems change and school improvement. The Leadership Academy creates a forum for open discussion and learning to help school and community members think more broadly and systemically about school improvement.

The following are the Leadership Academies in this module.

Academy 1: Mining Meaningful Data

This Academy helps participants develop their skills to analyze data over time to adjust and improve their strategies for instructional improvement. The activities in this module begin with personal reflection by participants on values and beliefs about the identification, collection and use of data for school improvement. It continues with a brief overview of the new accountability systems, moves to current methods being used by school systems and how this affects all students, and ends with an activity that requires participants to continue their reflection on tracking data that they can use to prepare for subsequent activities. Participants use data from their own school or another school in their state to begin to examine the link between data and practice changes.

As a result of the activities and information shared at this Leadership Academy, participants will:

- Clarify their reasons or rationale for using data to change practice.
- Identify and align meaningful data to renew their school improvement efforts to be more culturally responsive.
- Determine what data should be used to guide practice.
- Use school wide improvement survey and other forms of displaying outcomes to analyze data.

Academy 2: Identifying School-wide Patterns of Student Performance

This Academy helps participants develop their skills to analyze and use data over time to adjust and improve their strategies for instructional improvement.

As a result of the activities and information shared at this Leadership Academy, participants will:

- Identify a set of questions that will continually guide their leadership efforts for culturally responsive practices.
- Match the kinds of data that can be collected with those questions.
- Establish an ongoing process for measuring change effects.
- Understand the impact of progress in the building from a complex framework of change mechanisms.

Academy 3: Looking at Student Work to Target Instruction

In this Academy, participants learn to examine student work samples to target instruction and link aggregated student work data to make changes school wide.

As a result of the activities and information shared at this Leadership Academy, participants will:

- Lead a protocol with faculty on student work samples.
- Assist faculty in defining goals for enhancing their teaching practice with all students.
- Aggregate information from student work sample meetings to identify new targets for professional development, outreach to families and technical assistance to teachers or programs within the building.

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Data Mining

Academy 2: Identifying School-Wide Patterns of School Performance

Academy 2: Identifying School-Wide Patterns of School Performance

This Academy helps participants develop their skills to analyze and use data over time to adjust and improve their strategies for instructional improvement.

Module Outcomes

As a result of the activities and information shared in this Leadership Academy, module participants will

- Identify a set of questions that will continually guide their leadership efforts for culturally responsive practices.
- Match the kinds of data that can be collected with those questions.
- Establish an ongoing process for measuring change effects.
- Understand the impact of progress in the building from a complex framework of change mechanisms.

Activities and Lecturettes

These activities and lecturettes support the Leadership Academy's purpose and outcomes:

Activity #1: Fishbone Activity

In this activity participants will identify and discuss issues surrounding the evidence.

Lecturette #1: Richness and Complexity of Student Data

This lecturette includes strategies for overcoming assessment challenges facing instructors.

Activity #2: Understanding the Challenges

This affords the participant the opportunity to examine daily use of data and the challenges that such generation and use present.

Lecturette #2: Using Student Data: Understanding the Challenges

This lecturette outlines issues that influence data collection and use. The lecturette builds on Activity 2. It provides the basis for Activity 3.

Activity #3: Tracking Change

The activity is designed to assist participants in examining the types of changes that might or should occur, how to identify those changes and how to incorporate them in a school improvement schema.

Agenda

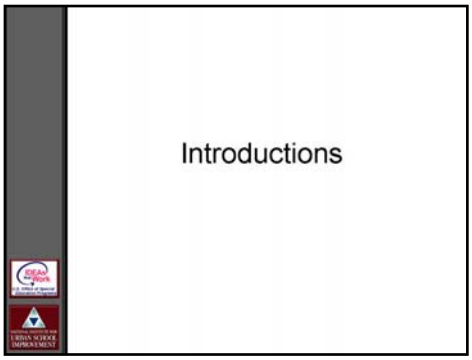
We constructed this Leadership Academy to occur within a 3-hour timeframe with 15 minutes or so for breaks and other time adjustments. The times listed below are approximate but reflect the time these activities and lecturettes have previously taken. Facilitators should be flexible, read their audience, and work to achieve the overall purpose and outcomes.

TIME	EVENT
15 min	Introductions and Greetings
35 min	Activity 1: Fishbone Activity
30 min	Lecturette 1: Richness and Complexity of Student Data
20 min	Activity 2: Understanding the Challenges: Assessing Your School's Student Achievement
10 min	Break
20 min	Lecturette 2: Using Student Data: Understanding the Challenges
15 min	Activity 3: Tracking Change
30 min	Leave-taking and Feedback

Introductions and Greetings

Spend some time introducing yourself, the module sponsors, and the Leadership Academy to the participants.

To facilitate this introduction, use the Academy Overview PowerPoint; it provides the background, Academy purpose and objectives, and the agenda. If time allows, ask participants to introduce themselves by letting others know where they are from and their roles and responsibilities within their buildings.



Facilitator Materials

Academy Overview

Time Limit

15 minutes

Activity 1: Fishbone Activity - Background

In this activity, participants will identify and discuss issues surrounding the evidence.

Activity Sections

- Part 1: School Data
- Part 2: Fishbones
- Part 3: Debrief

Complete Activity Takes 35 Minutes

Activity 1: Fishbone Activity

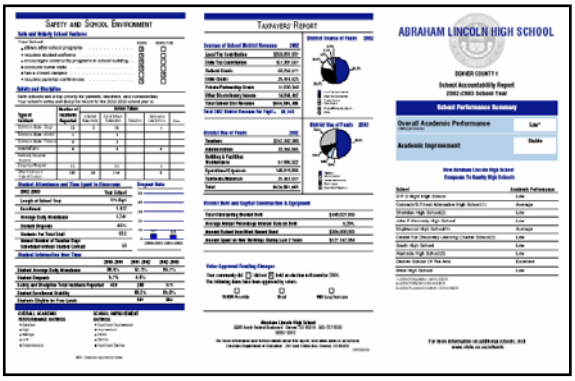
Activity 1, Part 1: School Data

Facilitator Materials

None

Participant Materials

School Data – Abraham Lincoln High School



Provided are data from Abraham Lincoln High School. You will probably want to use data from districts other than the ones your participants are from so they won't get wrapped up in whether or not the data are correct. Here are the instructions to get alternative school profile data.

1. Go to the School Accountability Reports web page: http://www.state.co.us/schools
2. Select your school district in the "list search" menu.
3. Select a school.
4. Click on the "See Detailed Report" for the full school data summary.

Activity Purpose

This activity provides a forum to discuss current issues for schools and districts.

Activity

Organize participants into small groups (3-5). Have groups look at *Conrad School Data* provided and discuss the various data found on the handout.

Facilitator Note

Breaking into groups can be a time consuming event. Be prepared for how you will handle this so your time isn't wasted on this part of the activity. Will the name tags have codes on them to facilitate this process? Will they be grouped by proximity?

Activity Time Limit

10 minutes

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Activity 1, Part 2: Fishbones

Facilitator Materials

None

Participant Materials

Fishbone Activity

Activity Purpose

Participants define those issues that undergird the use of data at the building leadership level.

Activity

Refer the groups to the *Fishbone Activity* and ask them to complete the parts of the fish.

The head should be the issue they decide to analyze more in depth from their *School Data* handout. The fishbones should be possible contributing factors to the issue. The tail should be points the group comes up with to the question: "What is the data NOT saying/showing? – what's missing?"


Fishbone Activity

For example: The dropout rate may change student population, resources, and staff, etc. The data may not be showing the attitudes of the dropouts.

Facilitator Note

None

Activity Time Limit

15 minutes

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Activity 1, Part 3: Debrief

Facilitator Materials

None

Participant Materials

None

Activity Purpose

This activity allows participants to collectively share what factors contribute to a single piece of evidence.

Activity

Return to whole group. Small groups should share the data they examined and one factor from their fish bones and fishtail.

Facilitator Note

None

Activity Time Limit

10 minutes

Lecturette 1: Richness and Complexity of Student Data

This lecturette outlines various assessment formats and potential uses for the evaluations.

Facilitator Materials

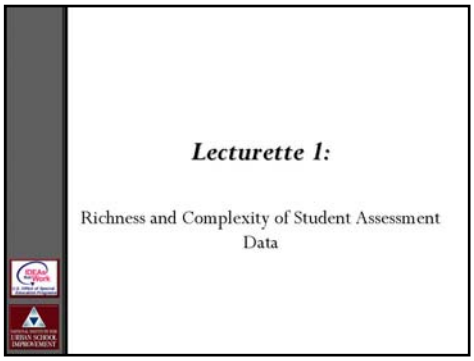
Lecturette 1 PowerPoint

Outcomes Met In Lecturette

- Establish an ongoing process for measuring change effects.

Complete Lecturette Takes 20 Minutes

Slide 1



Lecturette 1: Richness and Complexity of Student Assessment Data:
In the current political climate, data can be an educator's best friend. In this segment we identify and discuss the challenges faced by educators in collecting, disaggregating and planning for improved instruction using data.

Slide 2

Data Use Challenges:

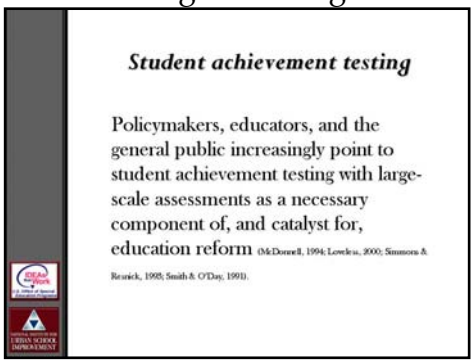
Collecting data is a challenge because the information that can help provide robust pictures of what is currently happening require systematic approaches to accumulating and compiling information from students, families and school professionals. Schools need to identify the data sources that will help them become more culturally responsive and then create systems that will ensure that data get collected in cycles. By collecting the same information in several cycles, the building leadership team, grade level teams and other interested groups can monitor change over time.

Disaggregating data is another challenge. A more complete picture gets told when data are sorted into groups that provide a way of comparing the same information

across different populations. For example, the second grade team might want to know by ethnicity, which groups of readers are most and least proficient at comprehension. Or, the math department may want to take a look at which group of high school students are most likely and least likely to choose advanced calculus or trigonometry. Breaking data out by subgroup helps the school and departments or teams understand where they are being successful and where they may need to improve their practices.

A third area that challenges schools is selecting measures of student performance that are done often enough for teachers to be able to adjust their practice to teach specific groups of students more effectively. Grades at the end of a quarter are summative. They tell teachers how well groups of students did in performing against the teacher's standard for that particular subject for that particular grading period. Since the grade comes as the end of the grading period, the teacher will not go back later and re-teach a concept or coach students through a particular algorithm. What teachers need is information in a quarter about how well students are grasping a particular concept and which students are grasping the concepts. This helps a teacher plan ahead to reteach to some students, offer more practice, and then accelerate other students who may need more time to develop new skills. This is formative evaluation: the teacher is using information to guide changes in instruction.

Slide 3

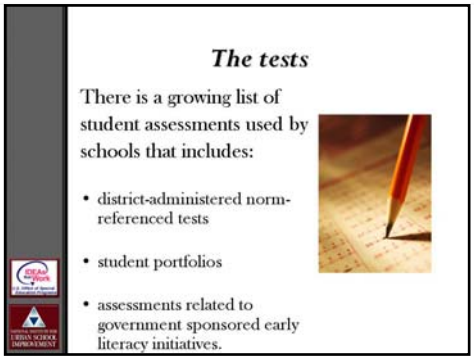


Student Achievement Testing:

In response to demands for higher levels of academic performance in our nation's schools, it is student achievement testing that is most relied on as the data to measure student learning. While standardized achievement is a central tool for measuring the success of various reform efforts, it is not sensitive enough to use for educational planning in classrooms. Achievement testing can be thought of as a way of benchmarking progress over time. However, as many educational researchers have demonstrated it is not sufficient to tell the whole story about what students know and are able to do. An important aspect of achievement testing is the degree to which all students' performances are included in the aggregation and disaggregation of data. Where all students are said to "count", we have seen increased attention to sound instructional practice for students who need more individualized or personalized instruction.

Facilitator Instructions: Ask participants to discuss incidents when they've seen this process happen. When did educational reform, relying solely on student achievement tests, affect their own school or position?

Slide 4



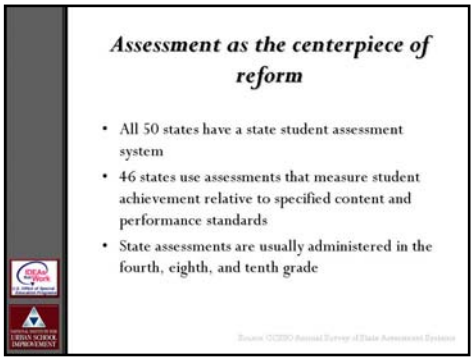
The Tests:

Recent waves of new or expanded state-mandated assessments have added to the already lengthy list of student assessments.

Facilitator Instructions:

Ask participants to name specific student achievement tests of which they know or use.

Slide 5



Assessment as the Centerpiece of Reform:

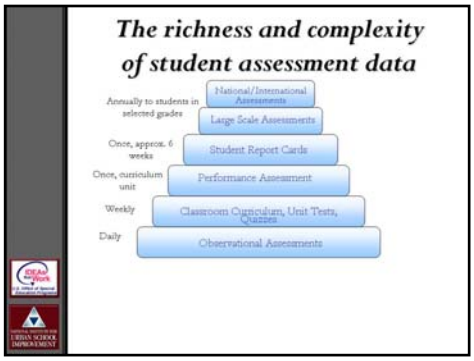
Most states have made student assessment the focus of their school reform and improvement efforts. Consider the following: Many schools work diligently to integrate a multitude of assessments.

Facilitator Instructions:

Have a group discussion on why states focus school reform and improvement efforts solely on assessments. What led to this?

Note: Try not to get into a debate as to whether this is a good or bad practice, keep it focused on why this is the current trend. Keep the discussion to 5 minutes.

Slide 6



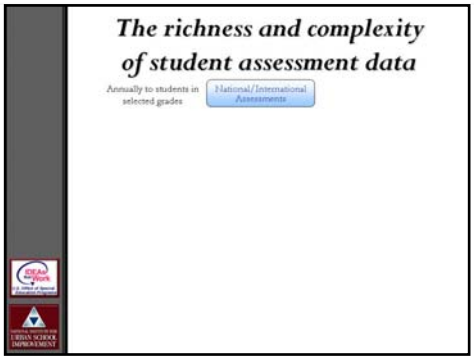
The Richness and Complexity of Student Assessment Data:

We use lots of data to discover if students are learning. Whether or not states look at all of it, instructors should use the feedback to improve daily instruction to maximize student achievement.

In the next slides are the challenges faced by educators in this endeavor and common strategies used by schools to overcome these challenges.

In addition to these, recent waves of new or expanded state mandated assessments have added to the already lengthy list of student assessments used by schools, including district administered norm referenced tests, student portfolios, and assessments related to government-sponsored early literacy initiatives (Cromey, 2000).

Slide 7



National/International Assessments:

The challenge: How does aggregated student performance vary across systems?

National and international assessments compare students to others at with similar numbers of years in school. They do not account for differences in student access to learning materials, high quality teaching, curriculum, cultural and linguistic diversity or abilities. At best, national and international assessments of progress help systems, rather than schools or classrooms, understand their performance in relationship to other systems. But many of the underlying factors that contribute to individual student performance are not revealed in this kind of accountability information.

Slide 8

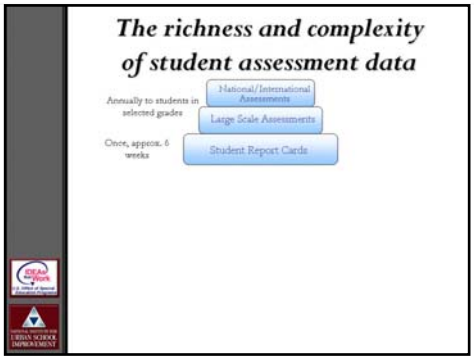
Large Scale State Assessments

The challenge: To what extent are students meeting state standards?

These assessments help to examine aggregated student performance across local school agencies (districts) within a state. Because states have developed or purchased statewide assessment systems, the data are not comparable across states. This is further complicated by the fact that state assessments may or may not have been specifically designed to measure the state standards. In some cases, the state standards are being measured by a prepackaged, commercial assessment system that was designed for several states and may or may not have been adequately tailored to a specific set of state standards. The assessments are predetermined and do not account for curriculum differences in various schools, districts, or educational situations (home schooling, magnet schools, etc.).

Performance on state assessments helps local education agencies understand how well their system is doing in comparison to other systems within the state. A good use of these data would be to visit other schools or systems where schools may be producing better results with similar populations of students. This kind of analysis and data gathering might help a school understand how to structure its services, redesign its professional development or reach out to the community.

Slide 9



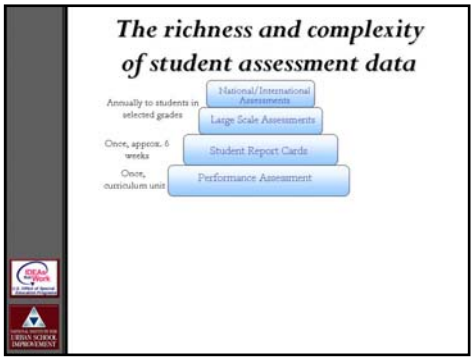
Student Report Cards:

The challenge: How do individual teachers judge student performance in their own classrooms?

Report cards provide information about student progress in individual courses. Grades are highly idiosyncratic. That is, teachers develop and use their own judgment in determining the value of work accomplished in their classrooms and its relative worth in relationship to an overall grade for a course or a grading period. Therefore, a grade in Mr. Smith's 9th grade algebra class is likely to mean something different than a grade from Mr. Jones in 9th grade algebra, even if both men teach in the same school using the same textbooks. If the math faculty in a particular school work collaboratively to evaluate student work samples, build a shared grading strategy, then there is more reason to assume that grades in one class can be compared to grades in another class.

Parents can use grades to help flag areas where their children may be struggling or succeeding in the curriculum. But everyone needs to bear in mind that grades are ultimately products of individual teacher judgment.

Slide 10



Performance Assessment:

The challenge: Can students apply and generalize what they have learned?

Performance assessments require students to perform a task rather than answer questions as on standardized tests. Such assessments include:

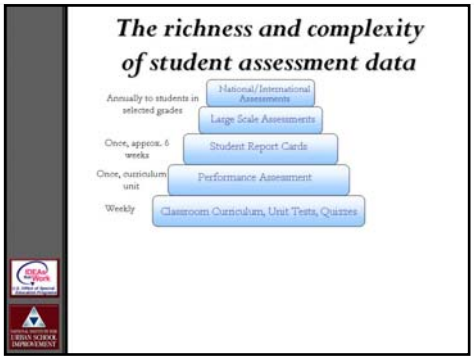
Open-ended questions such as, "How does El Niño affect weather around the globe?"

Extended tasks such as drafting, reviewing, and revising a poem

Portfolios of best pieces of work in a specific discipline

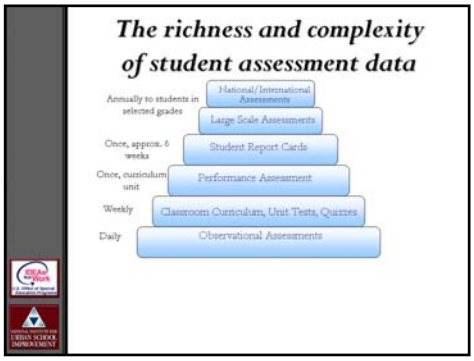
These assessments provide evidence of student learning. Depending on how they are constructed performance assessments may provide more ways of demonstrating learning. Since performance assessments often require complex responses, they also provide feedback to the students who complete them. Students may develop a better sense of what they understand and what they need to develop since they will have a difficult time completing a performance based assessment without well developed knowledge and skills.

Slide 11



Classroom Curriculum, Unit Tests, Quizzes:
The challenge: What do students know? These tests can be formative. They can assess student's knowledge and skill development. Quizzes can help teachers identify which students grasped this week's curriculum? Teachers may be able to determine whether they are on the right track or whether they need to reteach a concept. Compiling information from their students' performances on exams gives teachers information about which students may need support or if the entire class needs more opportunities to develop their understandings.

Slide 12



Observational Assessments:
The challenge: Are students learning it?
As teachers observe students learn, they collect information. Who's struggling? Who's getting it? What's working – not working? Is it the activities that are being used to teach a concept? Is there a problem with handling the materials? Do the students have adequate direction for the task? Do they understand what they are supposed to achieve? Do students have the vocabulary they need to master the activity? Have the students been divided into functioning learning groups or are there adjustments that need to be made? Answers to these questions provide immediate feedback so teachers can instantly change gears to make sure that they are including all their learners in a lesson. This seamless assessment-instruction pairing takes time to master, but provides the opportunity to adjust so that the classroom becomes a more stimulating learning environment.

Activity 2: Understanding the Challenges: Assessing Your School's Student Achievement - Background

This activity affords the participant the opportunity to examine daily use of data and the challenges that such generation and use present.

Outcomes Met In Activity

- Match the kinds of data that can be collected with those questions (generated in activity 1)

Activity Sections

- Part 1: Data Reliability
- Part 2: Pulling Together Data

Complete Activity Takes 20 Minutes

Activity 2: Understanding the Challenges: Assessing Your School's Student Achievement

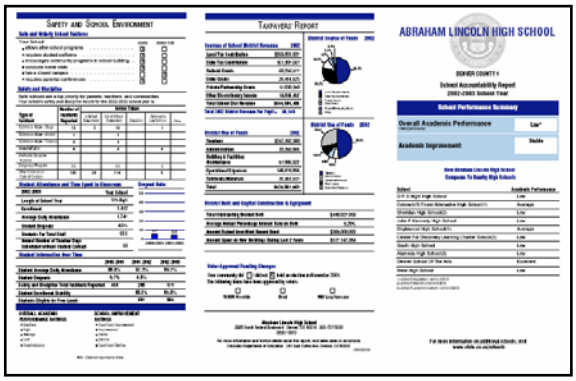
Activity 2, Part 1: Data Reliability

Facilitator Materials

None

Participant Materials

School Data



Activity Purpose

This activity allows participants to widen their perception of how data is presented and how to follow through with data information.

Activity

Begin with a brief group discussion. Discuss where the data from the handout came from. Is it reliable? What does it tell us? What doesn't it tell us? How do we verify the data? Where can we get more information?

Facilitator Note

Other questions may come up. Don't limit the discussion to these questions.

Activity Time Limit

10 minutes

Activity 2, Part 2: Pulling Together Data

Facilitator Materials

None

Participant Materials

Pulling Together Data

Activity Purpose

This activity is designed so that participant groups can begin listing data to further understand the importance and use of that data.

Activity

Organize participants into small groups. Have groups select a topic from their fishtail (The "What's missing from the data?" part of the *Pulling Together Data* handout) and complete the remainder of the *Pulling Together Data* handout.


Pulling Together Data

Data Collected	What's missing from the data?	Data still needed	What would collected data confirm or tell us?

Facilitator Note

None

Activity Time Limit

10 minutes

Lecturette 2: Using Student Data: Understanding the Challenges

This lecturette outlines issues that influence data collection and use. The lecturette builds on Activity 2. It provides the basis for Activity 3.

Facilitator Materials

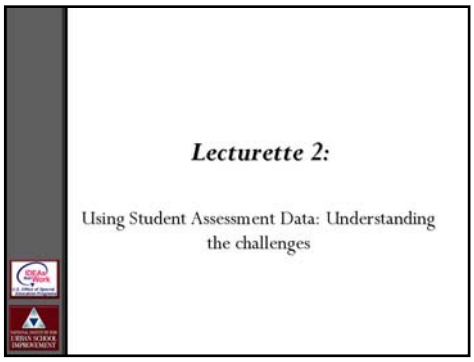
Lecturette 2 PowerPoint

Outcomes Met In Lecturette

- Understand the impact of progress in the building from a complex framework of change mechanisms.

Complete Lecturette Takes 20 Minutes

Slide 1



Lecturette 2: Using Student Assessment Data: Understanding the Challenges:
Earlier in the Academy we identified and discussed the various sources and uses of student data to inform instruction for all students. In this final phase of the Academy, we will turn our attention to strategies that focus our attention on overcoming obstacles and moving forward. We will generate a list of recommendations to support better use of assessment data in schools.

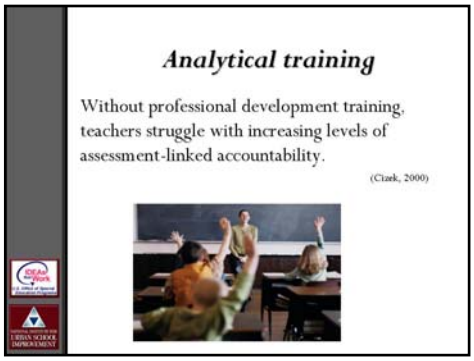
Slide 2

Professional Development:
Neither teachers nor administrators routinely receive formal training on how to assess students or how to apply assessment information to instruction (Cizek, 2000; Schafer & Lissitz, 1987; Wise, Lukin & Roos, 1991).

Facilitator Instructions:
Poll participants – how many have professional

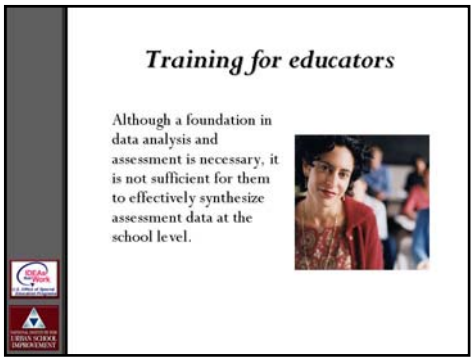
development experience in assessing students or applying assessment information to instruction?

Slide 3



Analytical Training:
In a study conducted by North Central Regional Education Laboratory, they found that many schools either lacked the resources needed to build capacity in their staffs, or reported insufficient communication between those with analytical skills and those without. Unable to take full advantage of the students' assessment data, these educators seemed to struggle with increasing levels of assessment linked accountability. Not surprisingly, these educators seemed to view the results from some assessments as punitive and punishing rather than vehicles for school improvement.

Slide 4

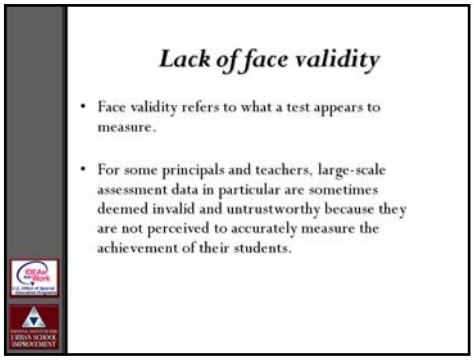


Training for Educators:
When training is provided, information on data analysis and assessment is not enough. How do teachers use this information? Teachers must be given skills as well as the theoretical knowledge on assessment and data analysis. Teachers must be trained in the use of data. Follow-up and support systems are ideal for this application. Educators are likely to have questions and need additional training as they apply their new skills.

Slide 5

Continuous Improvement:
How will educators use the data? Why should they collect it? Without meaningful reasons for data collection and use, educators will not have reason to follow-through on the data collection initiative. In addition to reasons for data collection they should also be given appropriate tools for data collection.
Facilitator Instructions:
Emphasize the term "use of data".

Slide 6

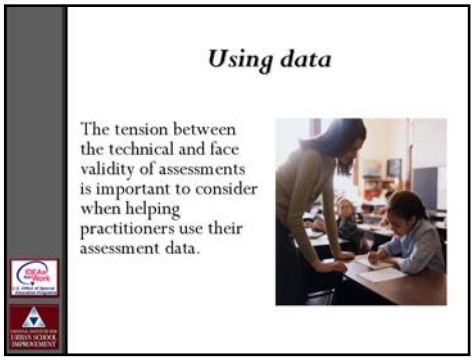


Lack of Face Validity:
Face validity is the appearance of what is measured. Does the test measure a specific skill such as word identification?

Sometimes a test appears invalid because it doesn't measure the real knowledge and skills of the students. Educators can sometimes rebel against large-scale assessments because the data doesn't accurately reflect student achievement. However, one must look deeply into the purpose of the test and the data before making the validity determination. Base your use of data on the purpose of the assessment.

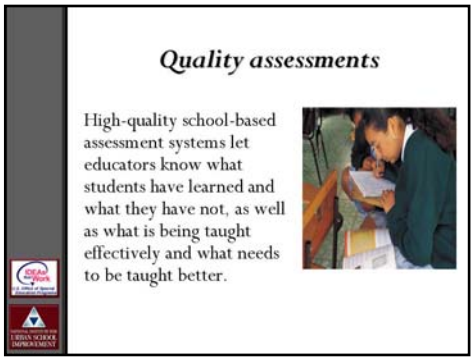
Facilitator Instructions:
What assessments have the participants run into that they have found invalid or untrustworthy? What were the situations? Reiterate that an assessment is not invalid, only inaccurate use of the data. Use assessment for the purpose that makes sense.

Slide 7



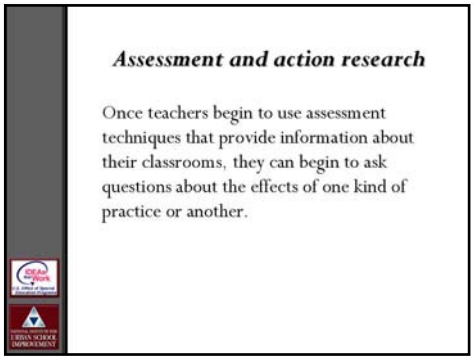
Using Data:
Siphoning the legitimate data from data that is invalid can be difficult. Be careful to check the validity of your assessments before using the data to change practice.

Slide 8



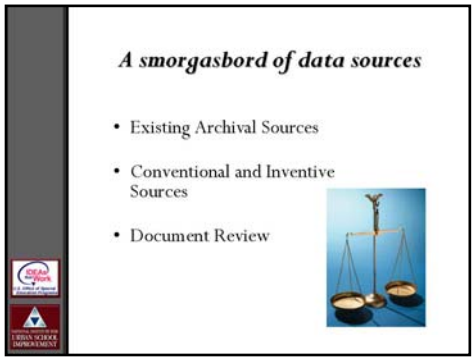
Quality Assessments:
Quality assessments give the educator data that supports the instructional process. It provides information on what students are learning and what needs to improve. Assessment is a valuable tool in the education process and is often the first place reformers look to make changes.

Slide 9



Assessment and Action Research:
Once teachers begin to use assessment techniques that provide information about their classrooms, they can begin to ask questions about the effects of one kind of practice or another. This is called Action Research.

Slide 10



A Smorgasbord of Data Sources:
A resource list or a springboard for generating data sources for collaborative action research to support more culturally responsive schools and classrooms.

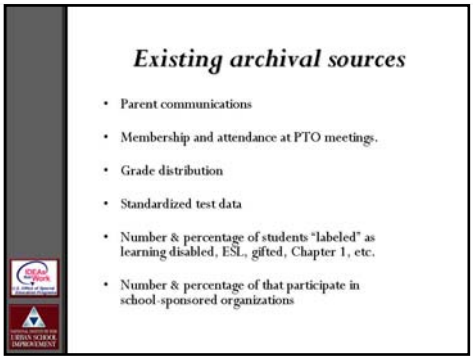
Selecting Data Sources for your action research - This can be a simple process if you have already identified your collective goal around culturally responsive practices. Once you know what your goal is, you need to have an action plan that includes information about what is happening now, a set of processes for implementing your plan and then, a way of evaluating or assessing its effectiveness.

Use multiple sources of data. For each kind of information that you want, make sure that you have a timeline for collecting the information and have assigned someone the task of getting it done. Review your completed action plan to ensure that you are collecting data from the appropriate sources. Make sure that have built in time to aggregate and disaggregate data so that you can look at effects of your work on various populations of students and families.

Slide 11

Existing Archival Sources:
Attendance rates
Retention rate/promotion rate—by school, grade level, teacher, and particular groups (e.g., male/female, race/ethnicity).
Discipline referrals—by school, grade level, classroom, particular groups.
Dropout rate—by school grade level, classroom, particular groups.
Suspension rates—by school grade level, classroom, particular groups.

Slide 12



Existing Archival Sources:

Number and percentage positive (and negative) parent communications—by school, grade level.

Membership in parent/teacher organization (PTO) (percent of parents; attendance at PTO meetings).

Grade distribution in science, math, social studies, etc.—by SES, race/ethnicity, gender.

Standardized test data (ITBS, criterion-referenced, academic proficiency)—use raw scores for comparison from year to year.

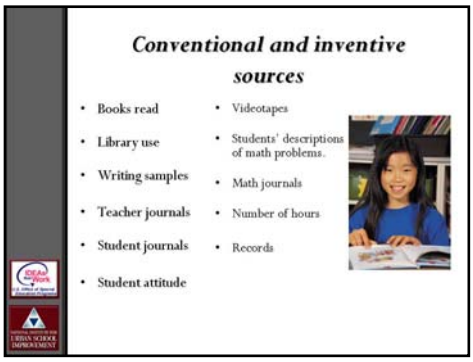
Number & percentage of students "labeled" as learning disabled, ESL, gifted, Chapter 1, etc.—by school, grade level. May also want to look at years student has been labeled.

Number & percentage of that participate in school-sponsored organizations (e.g., DECA, Future Business Leaders, Drama Club, Yearbook)—by school, grade level, classroom, academic "track," particular groups.

Facilitator Instructions:

Lead a short discussion on why these existing sources would be beneficial. Keep it to 5 minutes.

Slide 13



Conventional and Inventive Sources:

Number of books read by students and by school staff—by school, grade level, class.

Library use—by school, grade level.

Writing samples.

Teacher journals—focused on the school wide initiative.

Student journals—focused on the school wide initiative (e.g., 5 minutes spend writing about today's class).

Student attitude surveys about reading or math, followed by interviews.

Videotapes of students working in cooperative groups.

Videotapes of students solving math problems.

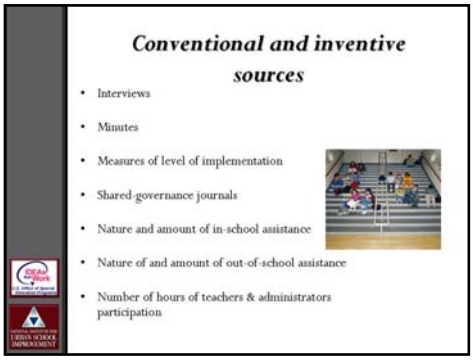
Students' written descriptions of math problems.

Math journals (students draw pictures or write equation for work problems.)

Number of hours allocated to formal student assessment, for state standardized tests and for end of unit/level tests—by grade level, teacher.

Records.

Slide 14



Conventional and Inventive Sources:

Records of peer observations or observation journals.

Videotapes of teachers using new teaching strategies or new materials, such as math manipulations.

Concerns survey—beginning of year, midpoint, end, etc.

Interviews about school wide initiative—when surveys do not provide enough information.

Minutes from follow-up meetings after staff development sessions.

Measures of level of implementation—fidelity to models used in staff development.

Shared-governance journals. Minutes from shared governance, council, or task force meeting.

Nature and amount of in-school assistance in curriculum implementation, data analysis, staff development from central office or regional service agencies.

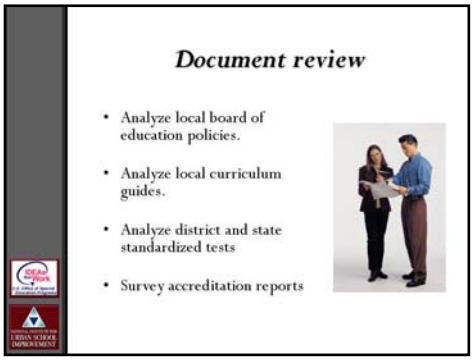
Nature of assistance, numbers of and amount of time contributed by volunteer parent or community members—school, grade level.

Number of hours teachers & administrators participate in required staff development activities and in voluntary professional development activities—–by school, grade level.

Facilitator Instructions:

Lead a short discussion on why these conventional sources would be beneficial. Keep it to 5 minutes.

Slide 15



Document Review:

Analyze local board of education policies, rules and regulations pertinent to the school's instructional initiative.

Analyze local curriculum guides for information pertinent to the school's instructional initiative.

Analyze district and state standardized tests and their accompanying technical and content manuals and the numerous reports sent to school district for information pertinent to the school's instructional initiative.

Survey accreditation reports for information pertinent to the school's instructional initiative.

NOTE: Remember to assign a number or code to "anonymous" information, such as

parents' attitude surveys, so that you can compare them over several years.

Slide 16

Overcoming the Challenge:

Ways to make sure educators are using assessments and data accurately and efficiently:

Align assessment, standards, curriculum, and instruction.

Provide professional development opportunities in student assessment for all teachers and staff.

Make time to involve teachers in planning and implementing school assessments.

Define the purpose of assessment.

Slide 17

Schools that Have Committed:

Schools committed to improving practice based on reliable assessments and data collections:

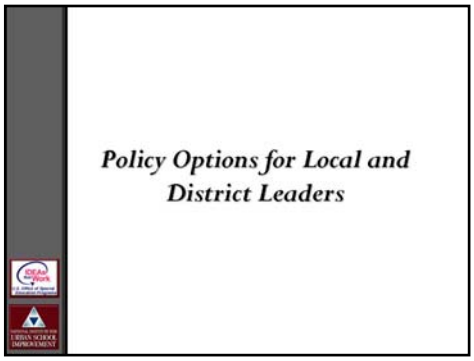
Monitor student progress.

Evaluate where assessments converge and diverge.

Judge the efficacy of local curriculum and instructional practices.

In spite of the barriers that have been described, some schools in the NCREL survey were making significant efforts to use student data to guide their school improvement efforts.

Slide 18



Policy Options for Local and District Leaders:

Local and district leaders can decide which tests and assessments are necessary. They can involve teachers to develop assessment practices that satisfy local needs, align with state frameworks, and track student progress over time. Finally, they may allocate more time, or modify existing schedules so teachers can analyze and reflect upon student assessment data, plan for revisions to their curricula and teaching practices, and receive in-service support on how to use student assessment data effectively.

Activity 3: Tracking Change - Background

The activity is designed to assist participants in examining the types of changes that might or should occur, how to identify those changes and how to incorporate them in a school improvement schema.

Outcomes Met In Activity

- Establish an ongoing process for measuring change effects
- Understand the impact of progress in the building from a complex framework of change mechanisms

Activity Sections

- Part 1: Day-to-Day Data
- Part 2: Measuring Change

Complete Activity Takes 15 Minutes

Activity 3: Tracking Change

Activity 3, Part 1: Day-to-Day Data

Facilitator Materials

Chart paper, an overhead, or presentation slide

Participant Materials

None

Activity Purpose

This activity allows participants to examine the various ways in which they use data in their everyday working situations.

Activity

Now that the participants can use and follow-through on data, ask them to identify some data they regularly use. Ask the participants: ***What kinds of day-to-day data do you use?*** List the responses on chart paper, an overhead, or presentation slide.

Facilitator Note

None

Activity Time Limit

5 minutes

Activity 3, Part 2: Measuring Change

Facilitator Materials

None

Participant Materials

Measuring Change

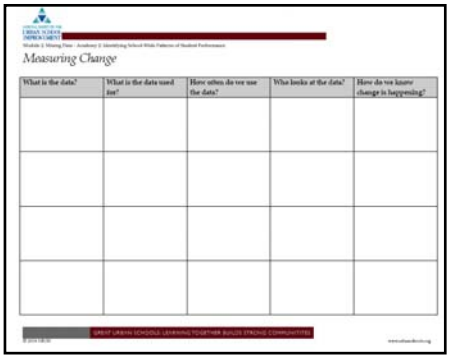
Activity Purpose

This activity allows participants to determine how they can follow-through with their daily interaction with data.

Activity

Organize participants into small groups.

Ask small groups to complete the *Measuring Change* handout using one or more of the responses identified in Part 1 of the activity. When they identify what data they will use, they will have to answer these questions:


Measuring Change

What is the data?	What is the data used for?	How often do we use the data?	Who looks at the data?	How do we know change is happening?

What is the data used for? This probably has more than one answer.

How often do we use the data? Daily? Monthly? Yearly?

Who looks at the data? The student? Teacher? Parents? Community?

How do we know change is happening? How does follow-up happen?

Facilitator Note

The completion rate of the handout will vary. Some groups will analyze more data than others. This is fine as long as the groups are thoughtfully analyzing the data.

Activity Time Limit

10 minutes

Leave Taking

Leave Taking, Part 1: Self Assessment

Participant Materials

Self Assessment

Activity Purpose

The self assessment provides the participant with an objective means of evaluating the knowledge and skills gained in this academy.


Self Assessment

Activity

Have participants complete the *Self Assessment*. Remind groups that their assessments will be collected for module assessment purposes and they do not need to put their names on the assessments.

Activity Time Limit

10 minutes

Leave Taking, Part 2: Debrief

Participant Materials

Chart paper, overhead, or presentation slide

Participant Materials

Self Assessment

Activity Purpose

This activity gives participants a chance to compare their evaluation answers.

Activity

Return to whole group and ask participants to share their responses. Use an overhead or chart paper to record what they say as a way to highlight new learning, and congratulate the group on their hard work.

Activity Time Limit

10 minutes

Leave Taking, Part 3: Academy Evaluation

Participant Materials

Academy Evaluation

Activity Purpose

This activity provides feedback for module developers from module participants.

Activity

Have participants complete the *Academy Evaluation*. This evaluation gives the module developers a chance to see how the academy is being received and allows them to improve it as needed.

Facilitator Note

Collect the *Academy Evaluations* and return them to the National Institute for Urban School Improvement along with the *Self Assessments*.

Activity Time Limit

10 minutes

Resources

Armstrong, J. & Anthes, K. (2001). How data can help. *The American School Board Journal, 188*(11), 38-41.
A study explored how districts can use data more effectively. Data were obtained from six schools in five different states that had reputations as particularly effective users of data. It emerged that districts that make good use of data share several characteristics. These common factors are strong leadership; a supportive district wide culture for using data for continuous improvement; a strong service orientation toward principals and teachers; partnerships with universities, businesses, and nonprofit organizations; a mechanism for supporting and training personnel to use data; close accounting of every student's performance on academic standards; a focused flexibility in how time is used; and a well-defined, data-driven school improvement process.

Brimijoin, K., Marquissee, E., & Tomlinson, C. A. (2003). Using data to differentiate instruction. *Educational Leadership, 60*(5), 70-73.
Part of a special issue on using data to improve student achievement. An overview of how one teacher uses assessment data to differentiate instruction is presented. The teacher uses multiple methods of data collection and believes her role as data collector is to determine students' prior understanding and achievement, track their responses to moderate challenges, and measure their outcomes against expected performance goals. She uses a wide array of pre-assessments when teaching new content and uses assessment to modify instruction so that each student is appropriately challenged. To prepare for state standards testing, she asks students to select topics that need more work and sets up centers to serve students' needs. In addition, this teacher uses assessment to target learner needs.

Brown, K. & Capp, Robert (2003). Better data for better learning. Leadership, 33(2), 18-19.
A standards-based assessment program at Rocklin Unified School District in Rocklin, California, uses technology to link assessments directly to standards, producing timely reports that teachers and administrators can use to monitor student progress and hone the curriculum. The four steps involved in this program include distributing assessments to students, scanning their answers into the classroom computer, using Web technology to collate the data, and using the data to quickly identify potential areas of concern.

Marzano, R. J. (2003). Using data: Two wrongs and a right. *Educational Leadership, 60*(5), 56-60.
Schools and districts often make two mistakes in their efforts to be data-driven. The first mistake occurs because schools use measures of student learning that are not sensitive to the actual learning occurring in classrooms. The second mistake comes about when a school or district has no system or plan for interpreting and using the data. Education research has revealed 11 student, teacher,

and school factors that affect student learning. These are a guaranteed and viable curriculum, challenging goals and effective feedback, parent and community involvement, a safe and orderly environment, staff collegiality and professionalism, teachers' instructional strategies, classroom management, classroom curriculum design, home atmosphere, learned intelligence and background knowledge, and student motivation. A survey instrument that can be used to identify specific elements for each of the 11 factors that directly affect student achievement is discussed.

Parsons, B. A. (2003). A tale of two schools' data. *Educational Leadership, 60*(5), 66-68.
The different approaches to data collection and analysis that are taken at two school districts are discussed. In the first district, an examination of previous scores is conducted, a goal is set, and individual teachers are left to figure out how to reach this objective. In the second district, a diagnosis is made, a goal is set, a planning system based on program planning and action as well as evaluative inquiry is created, and an Action Team and an Evaluative Inquiry Team is developed for each subject area. The first district reports progress on overall math achievement on a yearly basis, but teachers do not know how to link this information to the variables they can control. However, the second district reports on research-based changes to improve student learning, how levels of implementation of the new methods are linked to progress in student learning, and how teachers are sharpening their instruction.

Popham, J. W. (2003). The seductive allure of data: Using data to improve student achievement. *Educational Leadership, 60*(5), 48-51.
This article examines how teachers can use classroom data to improve teaching and learning, focusing on how to determine if data is reliable and useful. Topics include designing instructionally useful educational tests and analyzing data from standardized achievement tests.

Rudner, L. M. & Boston, C. (2003). Data warehousing: Beyond disaggregation. *Educational Leadership, 60*(5), 62-65.
Schools should consider data warehousing to ensure their data collection and reports comply with the new No Child Left Behind legislation and to provide a more precise tool for improving education. Data warehousing allows educators to use collected data for traditional purposes, to transform mountains of data into useful information, and to help policymakers identify and plan responses to key trends. When well-organized and easily accessible, a data warehouse can provide a wide range of important analyses that use cross-sectional and longitudinal data. Suggestions for building a functional education data warehouse are provided, and the benefits of data warehousing are discussed.

Thomas, R. S. (2003). Conversations that unlock knowledge in our schools. *Principal Leadership, 3*(8), 40-44.

Advice for school principals on how to develop the ability of faculty to discuss significant student learning issues is provided. This advice relates to the need to use several key categories of questions in faculty conversations if a school is to move from data to information to knowledge. These categories relate to understanding data, analyzing desegregated data, transforming data into information, benchmarking school performance against other schools, and using information to identify root causes of current achievement levels.

Thornburn, M. & Collins, D. (2003). Integrated curriculum models and their effects on teachers' pedagogy practices. *European Physical Education Reviews, 9*(2), 185-209.

There is increasing interest in how philosophy or overarching aims are articulated through the various planning stages to eventual teaching methodology Accordingly, this paper analyses the interrelationship between teaching, learning and assessment through tracking the decision-making chain from teachers' intentions to the assessment of student outcomes. The context employs an integrated curriculum model, which attempts to link improving performance within activities with the development of an underpinning knowledge about performance-related concepts. The paper reports findings from 40 semi-structured and small group interviews with PE teachers and students in a purposeful sample of secondary schools in Scotland, all following a centrally defined integrated curriculum. Results highlight profound disparities in the pedagogy practices teachers adopt in attempting to translate a dictated 'practical experiential' rationale into performance-led practice. Consequently, this paper provides discussion points for the further review of policy and related methodologies.

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Eight questions about implementing standards-based education. *Practical Assessment, Research & Evaluation, 5*(6).

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AERA position statement concerning high stakes testing in pre k-12 education. [http://www.aera.net/about/policy/stakes.htm]

Glossary

Building Leadership Team

A Building Leadership Team is a school-based group of individuals who work to provide a strong organizational process for school renewal and improvement.

National Institute for Urban School Improvement

The National Institute for Urban School Improvement (NIUSI) is funded by the Office of Special Education Programs at the U.S. Department of Education. The mission of NIUSI is to support the building of capacity in urban schools and school districts so that students with disabilities are engaged in high quality curriculum and learning experiences that improve their ability to succeed in school and in post-school opportunities.

Systemic Change Framework

The *Systemic Change Framework* visually represents the varying levels of effort that combine to affect student achievement and learning. The four levels of the framework are interconnected, as represented by the permeable lines that delineate levels and efforts. What occurs at the district level affects the school level, which in turn affects student learning. Of course all these local levels are constantly affected by the agendas, policies, and practices that emerge from state educational organizations and national governmental activities.