

Indicator: All teachers assess student progress frequently using a variety of evaluation methods and make appropriate curriculum adjustments based on results. (5085)

Evidence Review: Using Student Data to Drive Instruction

The *Using Student Achievement Data to Support Instructional Decision Making* practice guide published by IES defines data-based decision making as “. . .teachers, principals, and administrative, process, perceptual, and achievement gap, to guide a range of decisions to help improve the success of students and schools” (pp. 46). A number of activities and decisions undertaken by schools and districts involve data-based decision making, such as screening students for placement, using progress monitoring or formative assessments to determine curricular changes, and interpreting annual performance data to identify areas of weakness for future educational focus.

Data systems allow for the collection, interpretations, and use of student data. A universal screening system can be used at the beginning and middle of the school year to identify students who are academically on-track and those who are at-risk for difficulties in key critical content areas, such as reading and mathematics (Gersten, Beckmann, Clarke, Foegan, Marsh, Star, & Witzel, B., 2009; Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008). At-risk students can be selected to receive research-based interventions. Schools can then use progress monitoring data (collected on a frequent basis) to gauge the students' progress (or response to an intervention) towards critical academic outcomes (Tilly, 2008). Formative assessments can be collected in classrooms to give teachers feedback about students' understanding of the material presented and what minor adjustments to their instruction may be needed to improve students' understanding.

Employ the use of data systems in broader decision-making by utilizing annual state testing results to evaluate the effectiveness of their instructional systems. For example, a district may implement a new core reading series and analyze state testing results to determine if the new reading series is increasing student outcomes, or they may look at areas of poor performance in state testing results to determine where to allocate professional development dollars.

Action Principles

For District

1. Develop a data system or adopt an available data system that enables analysis of student outcomes at multiple levels (Hamilton, Halverson, Jackson, Mandinach, Supovitz, & Wayman, 2009).
2. Develop a district-wide plan for collecting, interpreting, and using data. Dedicate time and develop structures for district schools and teachers to use data to alter instruction (Hamilton, Havlerson, Jackson, Mandinach, Supovitz, & Wayman, 2009).
3. Train teachers and principals in how to interpret and use data to change instruction (Hamilton, Havlerson, Jackson, Mandinach, Supovitz, & Wayman, 2009).
4. Use annual state testing performance data to evaluate the overall effectiveness of instructional services provided by the district. Conduct deep analysis to determine areas in need of improvement (Hamilton, Havlerson, Jackson, Mandinach, Supovitz, & Wayman, 2009).

For School

1. Identify which students are at risk for difficulties with certain subjects, such as mathematics or reading, and provide more intense instruction to students identified as at risk (Hamilton, Havlerson, Jackson, Mandinach, Supovitz, & Wayman, 2009; Gersten, Beckmann, Clarke, Foegen, Marsh, Star, & Witzel; Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008).
2. Employ efficient, easy-to-use progress monitoring measures to track the progress of students receiving intervention services toward critical academic outcomes (National Center on Response to Intervention, n.d.; Hamilton, Havlerson, Jackson, Mandinach, Supovitz, & Wayman, 2009; Gersten, Beckmann, Clarke, Foegen, Marsh, Star, & Wayman, 2009; Gersten, Beckmann, Clarke, Foegen, Marsh, Star, & Witzel, 2009; Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008).
3. Use formative assessments to evaluate learning and determine what minor adjustments can be made to instruction to enhance student understanding (The National Center for Fair and Open Testing, 2007).

References and Resources

- Appalachia Regional Comprehensive Center. (n.d.). *Becoming data smart: A new tool for effective data use*. Retrieved from <http://www.edadvantia.org/publications/arccwebcast/june07/>
- Center for Comprehensive School Reform and Improvement. (2006, January). *Using classroom assessment to improve teaching*. Retrieved from http://centerforcsri.org/index.php?option=com_content&task=view&id=402&Itemid=5
- Data use for continuous quality improvement*, <http://datause.cse.ucla.edu/>
- Foegan, A., & Stecker, P. M. (2009). *An introduction to progress monitoring in mathematics: Presenter's manual*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from http://www.centeroninstruction.org/resources.cfm?category=math&subcategory=&grade_end=#229
- Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). *Assisting students struggling with mathematics: Response to Intervention (RtI) for elementary and middle schools. A practice guide*. (NCEE 2009-4060). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.gov/ncee/wwc/pdf/practiceguides/rti_math_pg_042109.pdf
- Gersten, R., Clarke, B. S., & Jordan, N. C. (2007). *Screening for mathematics difficulties in K-3 students*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/COI%20Math%20Screening.pdf>
- Gersten, R., Compton, D., Connor, C. M., Dimino, J., Santoro, L., Linan-Thompson, S., & Tilly, W. D. (2008). *Assisting students struggling with reading: Responses to Intervention and multi-tier intervention for reading in the primary grades. A practice guide* (NCEE 2009-4045). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/practiceguides/rti_reading_pg_021809.pdf
- Guskey, T. (2003). How classroom assessments improve learning. *Educational Leadership*, 5(60), 6-11. Retrieved from http://www.ascd.org/publications/educational_leadership/feb03/vol60/num05/How_Classroom_Assessments_Improve_Learning.aspx
- Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE 2009-4067). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/practiceguides/dddmg_pg_092909.pdf
- Learning Point Associates, & Educational Service Agency (ESA) Alliance of the Midwest. (2006). *Effective use of electronic data systems: A readiness guide for school and district leaders*

- from Learning Point Associates. Retrieved from <http://www.learningpt.org/pdfs/datause/DataReadinessTool.pdf>
- Lembke, E., & Stecker, P. (2007). *Curriculum-based measurements in mathematics: An evidence-based formative assessment procedure*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/CBMeasurements.pdf>
- McIntosh, K., Horner, R. H., Chard, D. J., Boland, J., & Good, R. H., III. (2006). The use of reading and behavior screening measures to predict nonresponse to school-wide positive behavior support: A longitudinal analysis. *School Psychology Review*, 35, 275-291. Synopsis of article. Retrieved from <http://www.centeroninstruction.org/files/Synopsis%20Reading%20&%20Behavior.pdf>
- National Center for Fair and Open Testing. (2007). *The value of formative assessment*. Retrieved from <http://www.fairtest.org/value-formative-assessment-pdf>
- National Center on Response to Intervention. (n.d.). *Progress monitoring tool chart*. Retrieved from <http://www.rti4success.org/chart/progressMonitoring/progressmonitoringtoolschart.htm>
- Tilly, W. D. (2008). The evolution of school psychology to science-based practice: Problem solving and the three-tiered model. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology V* (Vol. 1 pp. 17-35). Bethesda, MD: The National Association of School Psychologists.
- Torgesen, J. K. (2006). *A comprehensive K-3 reading assessment plan: Guidance for school leaders*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/K-3%20Reading.pdf>
- Torgesen, J. K., & Miller, D. H. (2009). *Assessments to guide adolescent literacy instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/Assessment%20Guide.pdf>
- **Using Student Data to Drive Instruction**, *SIG Handbook*, COI, pp. 113-115, www.centerii.org/survey

Evidence Review: Using Instructional Practice Data to Alter Strategies

Large-scale efforts to improve professional development for practicing teachers have emerged in recent years. Administrators face the central question “What decisions will create positive changes in classroom practice?” Good decision making relies on student performance data and teacher instructional practice data. One method that utilizes instructional practice data is Japanese Lesson Study, which has three core components: teacher observations by colleagues, critical analysis, and constructive feedback. These instructional practice data inform the teacher of strengths and weaknesses during lessons that would be addressed and corrected in the next lesson.

Teacher study groups also utilize instructional practice data by incorporating a five-phase process: Debrief, Discuss the Focus Research Concept, Compare Research with Practice, Plan Collaboratively, and Make an Assignment. During each session, participants begin by debriefing the lesson they collaboratively planned in the previous session. Teachers describe the lesson they taught, report on any adjustments they made while teaching the lesson, and discuss how students responded. Next, teachers read and discuss a current focus research concept. Afterwards, they compare how the research aligns with the instructional design of their current reading program. Last, they incorporate the focus research concept into the lesson they collaboratively plan and then teach the lesson.

Coaching cycles present another method for collaborative use of instructional practice data. Literacy and math coaches follow a deliberate cycle to scaffold teachers' ability to implement new ideas effectively. The cycle involves holding a pre-observation conference to discuss the goals of the lesson; observing a lesson that focuses on the aspects that have been jointly agreed upon;

and debriefing to analyze the instructional data. The cycle continues with a discussion about changes the teacher will make to future lessons. During this process, coaches encourage teachers to use reflective practices. The more they learn about teaching and learning, the more accurately they can reflect on what they are doing well and what needs improvement (Darling, Hammond, & Bradsford, 2005).

The most traditional and widely used method of collecting instructional data to alter strategies is the teacher evaluation. Although classroom observations and feedback are the most common practices, examining lesson plans, self-assessments, portfolio assessments, and review of student work samples can also be used.

Action Principles

For District

1. Develop a district-wide plan for collecting, analyzing, and interpreting instructional practice data. Organize district leadership teams responsible for developing protocols or other instruments that can be used as data gathering tools.
2. Provide ongoing professional development and support to administration, coaches, and instructional leaders so they will be able to effectively implement systems that utilize instructional practice data. Situate learning within a triadic model of assisted performance where administrators provide assistance to coaches; coaches to teachers; and teachers to students (Tharp & Gallimore, 1988).
3. Allocate resources to support the method (e.g., materials, released time, and stipends).
4. Redesign traditional teacher evaluation systems to use instructional practice data including self-assessments, portfolios, and teacher reflection.

For School

1. Determine which method for using instructional practice data will be used and provide ongoing professional development (Hall & Hord, 2001; Gersten, Dimino, Jayanthi, Kim, & Santoro, 2009; Watanabe, 2002; Hasbrouk & Denton, 2005).
2. Identify the group or individual teachers who will participate. This is often based on identifying classrooms where student need is the greatest.
3. Allocate time to implement the method.
4. Provide consistent administrative support (Hall & Hord, 2001). Make adjustments that create blocks of time for teachers to collaborate; find appropriate ways to acknowledge teachers who try to improve their practices, ranging from informal appreciation (such as a "thank you") to more concrete rewards such as stipends or graduate credit.

References and Resources

- National Science Foundation on Research and Evaluation on Education in Science and Engineering. *Japanese lesson study*. (n.d.). National Center for Education Research: Department of Education Institute for Education Sciences. Retrieved from <http://www.lessonresearch.net>
- Lewis, C. (2000, April). *Lesson study: The core of Japanese professional development*. Paper presented at the Special interest group on Research in Mathematics Education at American Educational Research Association meetings, New Orleans, LA. Retrieved from <http://www.lessonresearch.net/aera2000.pdf>
- Lewis, C., Perry, R., Hurd, J., & O'Connell, P. (2006, December). Lesson study comes of age in North America [Electronic version]. *Phi Delta Kappan*, 273-281. Retrieved from http://www.lessonresearch.net/LS_06Kappan.pdf
- Lewis, C., Perry, R., & Hurd, J. (2004, February). A deeper look at lesson study [Electronic version]. *Educational Leadership*, 18-22.

- Tanner-Smith, T. & Kosanovich, M. (2008). *Leading for reading: An introductory guide for K-3 reading coaches. Facilitator's guide*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from www.centeroninstruction.org/files/00-FG%20Title%20page.pdf
- Tanner-Smith, T., Jordan, G., Kosanovich, M., & Weinstein, C. (2009). *Principal's reading walk-through: Kindergarten-grade 3. Professional Development Module*. Portsmouth, NH: RSC Research Corporation, Center on Instruction. Retrieved from http://centeroninstruction.org/resources.cfm?sort=title&category=reading&subcategory=materials&grade_start=0&grade_end=12#203
- Watanabe, T. (2002). Learning from Japanese lesson study. *Educational Leadership*, 59(6), 36-39.

Coaching

- Bean, R. M. (2004). *The reading specialist: Leadership for the classroom, school, and community*. New York: The Guilford Press.
- Darling-Hammond, L., & Bransford, J. (Eds.). (2005). *Preparing teachers for a changing world*. San Francisco: Jossey-Bass.
- Hasbrouck, J., & Denton, C. (2005). *The reading coach: A how-to manual for success*. Longmont, CO: Sopris West.
- Tharp, R. G., & Gallimore, R. (1988). *Rousing minds of life: Teaching, learning, and schooling in social context*. New York: Cambridge University Press.

Teacher Study Groups

- Birman, B. F., Desimone, L., Porter, A. C., & Garet, M. S. (2000). Designing professional development that works. *Educational Leadership* 57, 28-33.
- Boggs, H. (1996). *Launching school change through teacher study groups: An action research project*. Retrieved from http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/d1/b1.pdf
- Gersten, R., Dimino, J., Jayanthi, M., Kim, J., & Santoro, L. (2009). *An investigation to the impact of the teacher study groups as a means to enhance the quality of reading and vocabulary instruction for first graders in Reading First school: Technical report*. Los Alamitos, CA: Instructional Research Group. Retrieved from http://www.inresg.org/downloads/TSG_Technical_Report.pdf
- Hall, G. E., & Hord, S. M. (2001). *Implementing change: Patterns, principles, and potholes*. Boston, MA: Allyn and Bacon.

Teacher Evaluation

- Cogshall, J., Max, J., & Bassett, K. (2008, June). *Using performance-based assessments to identify and support highly qualified teachers*. Retrieved from <http://www.tqsource.org/publications/keyIssue-June2008.pdf>
- Goe, L., Bell, C., & Little, O. (2008). *Approaches to evaluating teacher effectiveness: A research synthesis*. Washington, Dc: National Comprehensive Center for Teacher Quality. Retrieved from <http://www.tqsource.org/publications/teacherEffectiveness.php>
- Mathers, C., Oliva, M., & Laine, S.W. M. (2008, February). *Improving instruction through effective teacher evaluation: Options for states and districts*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved from <http://www.tqsource.org/publications/February2008Brief.pdf>
- National Comprehensive Center for Teacher Quality. (2009, March). *Methods of evaluating teacher effectiveness*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved from http://tqcenter.learningpt.org/publications/RestoPractice_EvaluatingTeacherEffectiveness.pdf
- National Comprehensive Center for Teacher Quality. (2009, April). *Evaluating teacher effectiveness: A workshop connecting research to policy and practice*. Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved from <http://www.tqsource.org/webcasts/teacherEffectivenessWorshp/index.php>

► **Using Instructional Practice Data to Alter Strategies**, COI, *SIG Handbook*, pp.117-120, www.centerii.org/survey

Evidence Review: Using Performance-Based Student Assessments

Performance-based student assessments play a powerful role in validating and monitoring the growth of all students and the success of curriculum and instructional programs. This importance increases in the context of persistently low-achieving schools, in which student growth can be fostered by learning experiences and performance opportunities that invite students to show what they can do with what they are learning. This strategy is not only sound pedagogically, but highly motivating and empowering for students. Such assignments, accompanied by appropriate instructional support, challenge each student to do or create something of value to themselves and others and to take the next step forward in their academic growth.

Performance-based assessments provide key opportunities for students to engage in tasks like those they will be asked to do in higher education and careers. Such tasks often take extended time and concentrated effort, and may call on students to plan, work cooperatively, and communicate results in a variety of formats. Performance tasks and assessments can be designed to call on students to display higher-order thinking skills and to integrate knowledge, skills, and conceptual understanding to successfully complete the assignment. The “doing” implicit in such tasks allows the assessment of a student’s developing cognitive and behavioral capacities for successful achievement.

High quality performance-based student assignments and assessments have the power to:

- Integrate students’ knowledge, skills, conceptual understanding, and performance capacities;
- Allow students to monitor their own growth and apply clear performance standards to their work; and
- Motivate students to set challenging learning goals meaningful to themselves, to strive for excellence, and to celebrate growth and achievement along the way.

Performance-based assignments and assessments can, in the context of project-based learning, become the ongoing central activities and assignments of the instructional program. Such rich and powerful assignments can provide an integrating context for knowledge and skills acquisition, accelerating learning in these specific areas as well.

The assessment challenge, at both the district and school levels, is to develop the capacity of classroom teachers to evaluate student work in shared and common ways, often using established rubrics or scoring criteria to evaluate student product and performances. The results are often complex and nuanced; the student work on such tasks is typically neither right nor wrong, but rather, combines a variety of strengths and areas needing improvement. Such evaluations can inform summative judgments, but, most fruitfully, they provide formative instructional guidance, challenging teachers to use the results to help students take the next steps towards excellence.

Action Principles

The fundamental action principle for states, districts, and schools is to integrate performance-based assessments and their results into their local and classroom assignments and assessments as a core part of instructional systems.

For State

1. Encourage the use of multiple measures, including performance-based assessments, in district and classroom assessment and accountability systems.
2. Provide professional development on the use of performance-based assessments locally to improve the alignment of student activities and assignments to the statewide standards and to monitor student growth.

3. Provide professional development to assist districts and schools to develop professional learning communities that address performance-based assignments and assessments.
4. Selectively employ powerful performance-based assessments in statewide assessment in language arts, science, mathematics, and social science.

For District

1. Ensure that all students have access to rigorous, standards-based instructional programs that address higher-order thinking skills and integrated performance.
2. Ensure that student assignments and assessments employ performance-based assessments among the multiple measures used to monitor student growth.
3. Provide professional development that teachers need to develop, evaluate, and learn from performance-based assessments.
4. Monitor the implementation of instructional programs incorporating standards-aligned, performance-based assignments and assessments.
5. Monitor individual student growth with common local assessments employing multiple measures (including performance-based assessments used formatively).

For School

1. Engage in professional collaboration about identifying and/or developing performance-based assessments, scoring them consistently, and using the results to improve instruction and monitor student growth.
2. Identify and commit to the school-wide use of performance-based assignments and assessments throughout the curriculum and throughout the school year.
3. Identify the methods and criteria for monitoring the success of this strategy.
4. Clearly and visibly communicate within the school community the achievement of students on performance-based assignments and assessments.

References and Resources

- Marzano, R. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Rabinowitz, S. (2009). *Next generation assessment systems*. Closing comments at the annual Reidy Interactive Lecture Series (RILS) Annual conference.
- Reeves, D. (2007). *Ahead of the curve: The power of assessment to transform teaching and learning*. Bloomington, IN: Solution Tree.
- Stiggins, R., Arter, J. A., Chappuis, J., & Chappuis, S. (2007). *Classroom assessment for student learning: Doing it right, using it well*. Portland, OR: Assessment Training Institute.
- Wiggins, G., & McTighe, J. (2007). *Schooling by design: Mission, action, and achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.
- **Using Performance-Based Student Assessments**, AACC, *SIG Handbook*, pp.131-132, www.centerii.org

Additional Tool:

- See tools and forms in *The Mega System: Deciding. Learning. Connecting*.
www.centerii.org/survey

Additional Resource:

- See research syntheses and indicators of effective practice in the *Handbook on Restructuring and Substantial School Improvement* and *The Mega System: Deciding. Learning. Connecting*. www.centerii.org/survey

