

Professional Development Support for Data Use by Teachers

Questions:

1. Is there research examining the essential parts of providing professional development support for teachers' use of data? If so, what distinguishes successful from unsuccessful support?
2. Is there research examining programs providing support for formative assessment use in the Northeast?

Report:

Following an established REL-NEI Reference Desk research protocol, we conducted a search for research reports as well as descriptive and policy-oriented briefs and articles in this area. The sources included federally funded organizations, additional research institutions, several educational research databases, and a general Internet search using Google and other search engines. We also searched for appropriate organizations that may act as resources on this issue. We have not done an evaluation of these organizations or the resources themselves, but offer these resources to you for your information only.

Our researchers found several recent resources pertaining to the essentials of providing professional development support for teachers' use of data, but we did not find a source that specifically addresses the distinction between successful and unsuccessful support. A Practice Guide compiled by the U.S. Department of Education contains a table listing the essential elements, cross-referenced with staff members (teachers, principals, IT staff, etc.) for whom they are relevant (Hamilton, 2009; see resource below). A second resource (Means, 2009; see reference below), which also encompasses national-scale findings, includes teachers' suggestions for professional development on data-informed decision making. A third resource presents another way of viewing professional development: "the best way to support teachers in adopting minute-to-minute and day-by-day formative assessment is through building-based teacher learning communities" (William, 2007; see resource below).

In response to the question about programs providing support for formative assessment use in the Northeast, we have reported findings for programs we believe to be in use in that region. In addition to the resources provided above, we have also included a list of related organizations on support for teachers' use of data.

Questions:

1. **Is there research examining the essential parts of providing professional development support for teachers' use of data? If so, what distinguishes successful from unsuccessful support?**

1.1. Using Student Achievement Data to Support Instructional Decision Making. *September 2009; Hamilton, L., Halverson, R., Jackson, S.S., Mandinach, E., Supovitz, J.A., & Wayman, J.C.; IES Practice Guide. NCEE 2009-4067; National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; 70 pages.*

Source: Institute of Education Sciences, U.S. Department of Education
(http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/45/43/57.pdf)

From the section on Recommendation 4. Provide supports that foster a data-driven culture within the school: “Provide targeted professional development regularly....The skills needed for effective data use range from data entry to data analysis to leadership; they also vary depending on professional roles (i.e., teacher, administrator, or technology support staff), content area and curriculum, experience with data analysis, and level of comfort with technology. For most staff, professional development should focus on how users will apply the data to their daily work and instructional planning, rather than on the functionality of the system. Staff with the specific role of maintaining the system, however, should receive specialized training that prepares them to maintain the system for all users” (pp. 35–36). Table 3 provides a checklist, *Suggested professional development and training opportunities* (p. 37).

1.2. Implementing Data-Informed Decision Making in Schools: Teacher Access, Supports and Use. 2009; Means, B., Padilla, C., DeBarger, A., & Bakia, M.; US Department of Education, Office of Planning, Evaluation and Policy Development; ERIC Document #ED504191.

Source: ERIC

(http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/43/48/3e.pdf)

From the ERIC abstract: “This interim report...describes the student data systems available to school staff members, how school staff members are using the systems and other forms of student data, teachers’ understanding of data displays and data interpretation issues, and the supports and challenges for school-level use of student data in planning and implementing instruction.”

The report includes teachers’ suggestions for professional development on data-informed decision making. From the ‘Professional Development and Technical Support’ section: “Fifty-eight percent of teachers with access to a data system thought that additional professional development on how to develop diagnostic assessments for their classes would be beneficial, and 55 percent said that they would like additional professional development on adjusting the content and approach used in their class in light of student data. Almost half (48 percent) reported the need for more professional development on the proper interpretation of test score data, and over a third (38 percent) for more professional development on how to formulate questions that can be addressed with data. Half (50 percent) reported that they could benefit from additional professional development on how to identify types of data to collect to monitor school progress against goals for improvement, and 44 percent reported a need for more professional development on the mechanics of using their data system. Over a third (37 percent) of teachers with access to a data system said that they would like professional development on techniques for collaborating with colleagues on the use of data” (p. 29). The report goes on to describe professional development offerings and other supports for school use of student data. A summary of “guidelines for schools and districts embarking on the implementation of data-informed decision making,” including “Professional development should include training on how to interpret data and how to translate data into changes in instructional practice,” begins on page 47.

1.3. Content Then Process: Teacher Learning Communities in the Service of Formative Assessment. September 2007; William, D.; Chapter 9 in *Ahead of the Curve: The Power of Assessment to Transform Teaching and Learning*. Reeves, D. (Ed.); Solution Tree Publications; pp. 183–204.

Source: Google Scholar

Full text of Chapter 9 is available online:

(<https://www.york.ac.uk/iee/strategyboard/meetings/13052008/Chapter9.pdf>)

From the ‘Embedding Formative Assessment with Learning Communities’ section: “If we are to have any chance of really changing teacher practice, we have to take seriously that implementing minute-to-minute and day-by-day formative assessment is not primarily a matter of providing teachers with new knowledge, although some knowledge will be important. The crucial thing is to change habits, and traditional teaching structures do not change habits.... [T]he best way to

support teachers in adopting minute-to-minute and day-by-day formative assessment is through building-based teacher learning communities. This is not because of an ideological commitment to the benefits of teachers talking to each other, but because of the nature of the changes we are seeking to produce. If we were trying to increase teacher subject knowledge, then teacher learning communities would not be a very sensible approach—it would be far better to arrange for high-quality direct instruction. But when we are trying to change deeply ingrained, routinized practices, then it seems that teacher learning communities offer the best hope” (pp. 196–197).

From the ‘Support’ section: “The learning community offers both support and accountability, but with two conditions: First, the teacher learning community builds trust among its members so that members can move beyond ‘polite serial turn-taking’ and begin genuinely to engage in each other’s professional development.... Second, the teacher learning community is genuinely a meeting of equals, at least in terms of power. In our experience, when one member of the community sets him- or herself up as the formative assessment ‘expert,’ the learning of the other members is compromised. While there is a valuable role for those who are not currently teaching—supporting the group, running interference, providing advocacy, and so forth—they can never be full participants in such a community” (pp. 199–200).

1.4. Achieving a Wealth of Riches: Delivering on the Promise of Data to Transform Teaching and Learning (Policy Brief). August 2009; Miller, M.; Center on Innovation and Improvement; 11 pages; ERIC Document #ED506783.

Source: Center on Innovation and Improvement
(<http://www.all4ed.org/files/AchievingWealthOfRiches.pdf>)

From the ERIC summary: “This brief addresses why using data represents a significant shift for most teachers in how they perform their jobs, explains the importance of using multiple types of data to affect learning, details the infrastructure necessary to encourage teachers’ use of data, and provides federal policy recommendations.”

From the ‘Using Multiple Types of Data to Improve Teaching and Learning’ section: “In order for teachers to move away from being data rich but information poor to using data to transform teaching and learning, they need to know which assessments to use and when and how to read and understand data. At the foundation, teachers need assessment literacy skills. They must be able to create valid and reliable assessments when applicable, embed assessment practices in instruction, and use multiple kinds of assessment data to make informed decisions about instruction. Teachers also need data literacy skills in order to access, convert, and manipulate data to make informed decisions in the classroom. Specific skills include the ability to compare multiple data sources, identify performance trends, link the data to student learning needs, and adjust lesson plans accordingly. Few teachers, especially those that have been in the classroom for several years, have been taught assessment or data literacy skills in their teacher preparation courses. Therefore, it is critical that schools, districts, states, and the federal government promote effective professional development to help build teachers’ abilities in these areas” (p. 6).

2. Is there research examining programs providing support for formative assessment use in the Northeast?

2.1. Using Student Data to Improve Teaching and Learning: Findings from an Evaluation of the Formative Assessments of Students Thinking in Reading (FAST-R) Program in Boston Elementary Schools. December 2008; Quint, J.C., Sepanik, S., & Smith, J.K.; MDRC; 145 pages; ERIC Document #ED503919.

Source: ERIC

(http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/43/05/69.pdf)

From the ERIC abstract: “This study examines the effects of the Formative Assessments of Student Thinking in Reading (FAST-R) initiative in the Boston Public Schools system (BPS), where the use of data to improve instruction is a general priority of the school district. The study looks at changes in reading scores over time at 21 BPS schools that operated FAST-R during the 2005-2006 and 2006-2007 school years and changes at a group of comparison schools serving

demographically similar students during the same period. The MDRC evaluation includes process and impact analyses. The process analysis found that teachers at the FAST-R schools who took a survey administered as part of the study reported that the professional development they received from the BPE FAST-R coaches was helpful and contributed to their understanding of data and their ability to work with students....Chapter 3 discusses the professional development activities in FAST-R and non-FAST-R schools highlighted by the findings of the principal and teacher surveys. The chapter also considers how teachers perceived the utility of the FAST-R intervention for their instructional practices."

2.2. How State Education Agencies in the Northeast and Islands Region Support Data-Driven Decision Making in Districts and Schools. *May 2009; LaPointe, M.A., Brett, J., Kagle, M., Midouhas, E., & Sanchez, M.T.; Regional Educational Laboratory Northeast and Islands Issues & Answers Report, No. 072; U.S. Department of Education, Institute of Education Sciences; 80 pages.*

Source: Regional Educational Laboratory

(<http://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=112>)

According to the abstract: "The report examines the initiatives of state education agencies in the Northeast and Islands Region to support data-driven decision making in districts and schools and describes the service providers hired to support this work. The report identifies four components of data-driven decision making initiatives and finds that not all initiatives include all four." The report includes a catalogue of service providers used by jurisdictions in the Northeast and Islands Region (Appendix E, p. 55). Also included in Appendix F are profiles of three of the service providers: "Providers had to meet the following criteria: work with multiple jurisdictions in the region, been in existence for two or more years, and have offered these services for two or more years. In addition, organizations had to offer professional development in using data to inform teaching and learning, not just support on the other components. This appendix contains in-depth profiles of those three service providers – the Connecticut Regional Educational Service Centers (RESC) Alliance, Measured Progress, and Performance Pathways" (p. 60).

2.3. Data Use: Data-Driven Decision Making Takes a Big-Picture View of the Needs of Teachers and Students. *Winter 2009; Bernhardt, V.L.; Journal of Staff Development, Volume 30, Number 1; pp. 24–27; ERIC Document #EJ827537.*

Source: ERIC

Full text available for purchase from National Staff Development Council:

(<http://www.nsd.org/news/articleDetails.cfm?articleID=1786>)

From the ERIC abstract: "In this article, the author describes how Marylin Avenue Elementary School [in Livermore, CA] successfully employed data-driven decision making to improve student achievement. She suggests that for schools to see student achievement increases in every subject, at every grade level, and with every student group, educators must look at big-picture data. They must understand what is being implemented to know what needs to change. It is not enough for educators to focus on just one thing they think can change; they must look at all the data. Armed with a big-picture view, schools have the ability to improve all of their processes."

Additional Organizations to Consult

- **TERC**

(<http://www.terc.edu/>)

TERC is a nonprofit educational research and development organization focused on mathematics and science education. One of its initiatives is Using Data which can be accessed through the following link: <http://www.terc.edu/ourwork/usingdata.html>. "The mission of Using Data is to provide the capacity schools need to make their data-driven school improvement processes successful and to help make increased student achievement a reality. The mission of Using Data is to provide the capacity schools need to make their data-driven school improvement processes successful and to help make increased student achievement a reality. Through a series of workshops, Using Data guides educators and administrators to work collaboratively with data in order to identify root causes, implement research-based solutions, take action, and monitor the changes made in their schools and communities. Using Data also utilizes a unique set of supporting resources and publications as an integral part of workshop delivery."

- **Research for Better Teaching**

(<http://www.rbteach.com/rbteach2/Home.html>)

According to the website: "RBT [Research for Better Teaching] is a school improvement organization of twenty-one senior educators with extensive experience in teaching and leadership....RBT offers nationally recognized programs to:

- Develop teacher evaluation systems
- Train data coaches and data teams
- Develop leadership skills for strong school culture
- Build in-house professional development capacity to ensure skillful teaching.

RBT has the longest and most successful track record of any professional development provider in the United States for developing teacher evaluation systems (since 1982.).... We work under contract to the school districts themselves, supervise the complex process of developing the evaluation system with involvement of all stakeholder groups, and, importantly, deliver in-depth skill training and certification of evaluators on the skills of evaluation." Several workshops on data coaching are offered.

- **Learning Innovations at WestEd (LI)**

(<http://www.wested.org/cs/we/view/pg/13>)

According to the website: "Learning Innovations at WestEd (LI) improves education for children by strengthening adult learning and promoting systemic improvement at the state, district, and school levels. LI provides professional development, research, and evaluation that bolster teacher quality and leadership, address needs of English learners and students with disabilities, and improve learning in science, math, and other subjects."

LI offers the 'Local Accountability Professional Development Series' which builds capacity of the district and/or school leadership team to fully implement the accountability system to improve student achievement rapidly. The rigor of the standards and assessments developed at the district and schools, using the LAPDS system, aligns with the National Assessment of Education Progress (NAEP) item specifications and the blueprints of the district or school's state assessment." (<http://www.wested.org/cs/we/view/serv/83>). LI also offers consulting services around data coaching.

- **Education for the Future**

(<http://eff.csuchico.edu/html/home.html>)

According to the 'About Us' section of the website: "Education for the Future is a not-for-profit initiative located on the California State University, Chico campus that focuses on working with schools, districts, State Departments of Education and other educational service centers and agencies on systemic change and comprehensive data analyses that lead to increased student learning." The founder of EFF is Victoria Bernhardt.

- **Data Use**

(<http://edadmin.edb.utexas.edu/datause/>)

According to the website: "This website provides resources to support the effective use of educational data at the K-12 level." The work is based at the University of Texas at Austin and headed by Jeffrey Wayman. The 'Publications' page (<http://edadmin.edb.utexas.edu/datause/publications.htm>) contains links to many current articles on data use, for example, **First-year Results from an Efficacy Study of the Acuity Data System** and **Preparing Educations to Effectively Use Student Data Systems**.

- **The Center for Data-Driven Reform in Education (CDDRE)**

(<http://www.cddre.org/index.html>)

From the 'About Us' section of the website: "The Center for Data-Driven Reform in Education conducts research into how school districts can use data-driven reform to improve student

achievement. CDDRE provides the following services to state, district, and school leadership teams through its **Raising the Bar** program:

- training in and coaching on using a data-driven decision-making process for planning and achievement,
- information on research-proven solutions to student-achievement challenges, and
- training in and coaching on instructional leadership and achievement monitoring.”

CDDRE is based at the Johns Hopkins University School of Education.

Key words and search strings used in the search:

“data” OR “data inquiry” OR “formative assessment” OR “achievement data” OR “student data” AND “professional development”

Search databases and websites:

Institute of Education Science Resources (IES): Regional Educational Laboratory Program (REL); IES Practice Guides; What Works Clearinghouse (WWC); Doing What Works (DWW); Institute of Education Sciences (IES)

Other Federally Funded Resources: The Assessment and Accountability Comprehensive Center; The Center on Innovation and Improvement; The National Comprehensive Center for Teacher Quality; The National High School Center; Center for Data-Driven Reform in Education

Additional Resources: Education Development Center; WestEd; American Institutes of Research; The Campbell Collaboration; Council of Chief State School Officers (CCSSO); Consortium for Policy Research in Education (CPRE)

Search Engines and Databases: EBSCO Databases; ERIC; Google, Google Scholar; General Internet Search

Criteria for inclusion:

When Reference Desk Researchers review resources, they consider, among other things, four factors:

1. **Date of the publication:** The most current information is included unless in the case of nationally known seminal resources
2. **Source and funder of the report/study/brief/article:** Priority is given to IES, nationally funded, and certain other vetted sources known for strict attention to research protocols);
3. **Methodology:** i.e. Random control trial studies, surveys, self-assessments, literature reviews, policy briefs, etc. Priority for inclusion is given generally to random control trial study findings; however, the reader should note at least the following factors when basing decisions on these resources: Numbers of participants (just a few? Thousands?); Selection (did the participants volunteer in the study, or were they chosen?); Representation (were findings generalized from a homogeneous or a diverse pool of participants? Was the study sample representative of the population as a whole?)
4. **Existing knowledge base:** Although we strive to include vetted resources, there are times when the research base is slim or non-existent. In these cases we have included the best resources we could find, which may include newspaper articles, interviews with content specialists, organization websites, etc.

REL Northeast and Islands

The Regional Educational Laboratory (REL) Reference Desk is a service provided by a collaborative of the REL program, funded by the U.S. Department of Education's Institute of Education Sciences (IES). This response was prepared under a contract with IES, Contract ED-06-CO-0025, by REL Northeast and Islands administered by Education Development Center, Inc. The content of the response does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.