

A BETTER WAY *to* MEASURE

NEW SURVEY TOOL GIVES EDUCATORS A CLEAR PICTURE OF PROFESSIONAL LEARNING'S IMPACT

By Rolf K. Blank

Just when educators are learning more about what constitutes effective professional development, a collaborative team of education researchers and practitioners have developed, tested, and implemented a cost-effective method of measuring and reporting on the quality of teacher professional development.

The teacher professional development analysis tool was developed as part of the Surveys of Enacted Curriculum (SEC) online reporting system, with support from the National Science Foundation. The analysis tool is now being disseminated and offered for use by education leaders, professional development specialists, and evaluators.

This new tool for reporting and analyzing teacher professional development was designed with findings from leading research studies since the mid-1990s, which have reshaped the way educators and researchers define effective teacher development.



NEW APPROACH TO MEASURING TEACHER DEVELOPMENT

The SEC survey-based analysis method is teacher-based, not program-based. The use of a web-based tool directly with teachers allows educators and evaluators to gain a comprehensive picture of the professional development received by teachers over a given period of time (e.g. one year or one semester), and then to relate quality measures to intended outcomes (e.g. improving practice or raising student achievement). The methodology that has been developed and implemented under the SEC system addresses three key issues in evaluating teacher development:

1. Problem of measuring single program effects:

Evaluations are often designed to try to measure the effects of a single professional development initiative. Educators know that in reality, most teachers participate in multiple learning programs, training courses, evening classes, workshops, or teacher networking over the course of a school year. It is very difficult to isolate effects of a single program.

2. Best uses of survey method: Surveys have been used in many different ways with teachers such as assessing workshop implementation, identifying teacher perceptions or attitudes, or determining needs for improvement. Research on effective surveys shows that responses are more accurate and valid when respondents report on behavior or practices rather than perceptions or attitudes (Desimone, 2009).

3. Integrate teacher development with curriculum: Designs and programs for teacher professional development are often not coherent with the school curriculum and teacher assignments, and the learning is not integrated into overall school strategies for improvement. As a result, an evaluation will provide little information on how well the teacher development contributed to improvement of teaching.

Since 1998, the Council of Chief State School Officers has partnered with researchers and a collaborative of states to develop, test, and implement a system of survey tools that have the primary function of reporting comparable data on key indicators of classroom instruction, both content and practices. The design and structure of the survey tool ensures data collection and reporting at a moderate level of depth about the methods and content of instruction as well as the characteristics and depth of teacher preparation and continuing development in the teacher's assigned subject area.

Educators can analyze data from the system to determine the degree of relationship between a teacher's level of education and development in his or her field and the instruction he or she leads in the classroom. Since consistent data can be collected from sets of teachers in a given subject or grade level, we can analyze professional development effects for groups of teachers that have had similar preparation and experience. Therefore, the survey data can be categorized so that across a sizable group of teachers, the relationship of professional development to subsequent instruction can be clarified and distinguished from other possible confounding factors.

DEVELOPMENT OF QUESTIONS AND REPORTING SCALES

From 2002 to 2006, a team of researchers and educators developed and tested a new set of survey measures of the quality and amount of teacher professional development (Smithson & Blank, 2007). The set of items for the survey tool were written specifically to measure characteristics of teacher professional development that have been demonstrated in numerous scientific research studies to produce positive outcomes for improving teaching and

learning. (Key studies include: Birman & Porter, 2002; Corcoran & Foley, 2003; Cohen & Hill, 2001; Loucks-Horsley, Hewson, Love, & Stiles, 1998; Kennedy, 1999; Garet, Porter, Desimone, Birman, & Yoon, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002.) The research findings clustered around five main characteristics of teacher professional development designs that produce effective results:

- Content focus;
- Active methods of learning by teachers;
- Coherence with curriculum;
- Collective participation; and
- Sufficient time — frequency, duration, follow-up.

For the Surveys of Enacted Curriculum professional development component, the team wrote sets of items that adequately measure these key constructs. A key objective was including sufficient numbers of items to produce a reliable, valid reporting scale. Following are examples of the items that are included in several of the scales of quality professional development that were produced and are now can be used through the SEC system:

Professional development time/frequency by type of activity:

- Coursework, workshop, institute, and/or inservice.
- Coaching, mentoring, network, curriculum writing, assessment development.
- Number of hours per activity, frequency and duration (including clear definition of teacher professional development).

Coherence:

- Supports school improvement plan.
- Is consistent with subject/grade curriculum.
- Follows from prior teacher development session.

Collective participation:

- All teachers from school involved in professional development activities.
- Learning activities include teachers in department groups.

Active engagement of teachers:

- Leads session during professional development.
- Practices learning or receive feedback.
- Develops assessments.
- Receives coaching or mentoring.

Content focus:

- In-depth study of specific concepts.

The teacher professional development analysis tool was developed as part of the Surveys of Enacted Curriculum (SEC) online reporting system.

- Alignment of curriculum to standards.
- Study how children learn concepts.
- Specific instructional approaches to content.

HOW SURVEY DATA ARE REPORTED

The Surveys of Enacted Curriculum professional development data are collected from individual teachers using the online system (see <http://seconline.wceruw.org/secWebHome.htm>). A district or school leader, researcher, or evaluator can request and contract to use the online system for a nominal fee. Each user

group leader defines survey components to match the group's objectives and the teachers to be surveyed. The system provides orientation materials and presentations for use by leaders, and they can be presented in person or through online video streaming.

The data results are reported online to users. Formatted data displays provide user-friendly analysis and interpretation of data. Since a range of background characteristics are part of the survey data collected, educators analyze results with several options for cross-tabulations, e.g. teacher experience, school size, or student achievement.

The chart on p. 59 shows an example of how the professional development surveys data are reported, in this case showing teacher responses concerning learning they experienced over a one-year period (Blank, 2004). Several of the items are used to analyze the extent of "active engagement of teachers" during their professional development. The method of displaying response data for groups of teachers allows for comparisons between different teacher categories, or the same teacher data can be compared at two points in time (e.g. those in year one vs. those in year two).

WHAT WE LEARNED

The SEC approach to professional development was used in a multidistrict, multistate longitudinal study of the effects of a specific targeted approach to teacher development completed in 2007. The teacher surveys developed by the CCSSO team were implemented with 500 middle grades teachers across four large school districts that were part of the National Science Foundation Math and Science Partnership (MSP). Half the teachers who were surveyed in year one of the project were enrolled in the local Math and Science Partnership design for professional development (treatment group) and the other half were teaching in similar schools and assignment in the same district (comparison group). At the end of two years, after professional development activities were completed, the surveys were administered again to the same teachers. One objective was to

measure differences in the amount and quality of professional development between the two groups of teachers. A second objective was to measure the degree of change in instructional practices and content of instruction that can be attributed to effects of the teacher professional development.

Following are several key findings from the study, and the differences reported below were all statistically significant. These findings illustrate the kinds of analyses that are possible using the teacher SEC method of evaluation over time.

More time in professional development.

Teachers in MSP-supported professional development (the treatment group) reported significantly more time spent in professional development, as compared to comparison teachers. Critical to this measurement and analysis was the use of reliable, comparable metrics for defining and tracking methods of professional development across different locations, subjects, and activities. The definition and item development through the SEC surveys greatly improves accuracy of measurement of amount of teacher development over a specific period of time.

Greater focus on subject content.

In the four-site study, mathematics teachers participating in the treatment group for professional development reported significantly greater math content in their professional development than teachers in the comparison group, and the professional development in the target group had significantly greater focus on standards and instruction.

Quality of preparation for challenging content and diverse students.

In our longitudinal study, teachers in the target group indicated that at the end of the professional development period they were better prepared to teach challenging math content as compared to teachers in the comparison group; and the target group teachers programs reported higher agreement that they were prepared to teach a diverse group of students than comparison teachers.

Change in instructional practices.

With the link between data on professional development and teachers' instruction in their classrooms, we could determine that the instructional practices of math teachers in the target group changed over time so that teachers increased the time and emphasis on demonstrating understanding of mathematics, analysis of information, and active learning by students, as compared to the practices of comparison teachers.

Alignment of instruction to standards.

When teacher professional development is conducted within an improvement initiative based on state content, one key objective is to align classroom instruction more closely with stan-

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Active learning of professional development activities in middle school mathematics and science



Source: Blank, 2004.

dards for curriculum. In our evaluation study, we analyzed the relationship between quality measures of professional development and instructional content being taught. Two measures of the quality of professional development were found to be positively associated with greater alignment of instruction to standards: coherence with curriculum being taught by teachers and focus on content.

PUTTING RESEARCH INTO PRACTICE

Education decision makers, staff development leaders, and program evaluators are seeking models for professional development evaluation that are research-based and provide valid, reliable measures that adequately address the development initiative.

In our evaluation study, we analyzed the relationship between quality measures of professional development and instructional content being taught.

Given the wide range of policy and program initiatives aimed at improving teacher knowledge and skills, a critical need in K-12 education is improving evaluation of the quality of teacher development. Too often, evaluation methods only address teacher perceptions or the amount or types of teacher development that were provided.

It is critical that evaluation methods for improvement initiatives be tied closely to findings from leading research. The SEC-based survey method provides for effective evaluation of evidence from teacher development programs in light of key constructs of quality. This method gives priority to evaluating the sum of knowledge development activities for teachers in relation to school and district improvement objectives. Leaders can assess a range of data regarding impact on target teachers over a period of time and do not have to weigh findings from separate studies of multiple programs in a district or school or try to sort out results from overlapping program initiatives.

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