Chapter 9

WORKING COLLABORATIVELY

Where are we?

Teachers in our school prefer to work independently on tasks associated with their classroom.

STRONGLY AGREE   AGREE   NOT SURE   DISAGREE   STRONGLY DISAGREE

Teachers in our school work collaboratively on most tasks related to teaching and learning.

STRONGLY AGREE   AGREE   NOT SURE   DISAGREE   STRONGLY DISAGREE

In our school, professional development is typically a whole school experience.

STRONGLY AGREE   AGREE   NOT SURE   DISAGREE   STRONGLY DISAGREE

Most teacher professional development occurs outside the school day and year.

STRONGLY AGREE   AGREE   NOT SURE   DISAGREE   STRONGLY DISAGREE

Collaborative work among teachers can be rewarding and productive. It can also be messy and challenging. When teachers know about a variety of ways to structure their collaborative time to meet their agreed-upon goals, they are far more likely to use time effectively.

This chapter looks at some of the decisions related to teamwork. Some of these decisions are dependent upon what the team wants to accomplish while others are dependent on the team's preferences. If a team wants to study various ways to teach students to write persuasive text, teachers have several options. They can engage in outside-in or inside-out learning

Outside-in learning. With the Outside-In option, someone from outside the school tells teachers how to teach students to write persuasive text. This person typicall is the best expert outside the school available, affordable, and willing to help teachers learn how to teach persuasive writing to their students. Usually the expert who arrives provides teachers with some instructional strategies to use in their classrooms and less frequently helps teachers know more about persuasion and students' developmental capacity to engage in persuasive thinking. Most teachers have extensive experience with outside-in professional development. This more traditional and often formal method for teacher learning has been practiced in schools for a long time.

Another version of outside-in learning occurs when a teacher leaves school to gain knowledge and skill about teaching persuasive writing and carries that

knowledge back into the school.

Inside-out learning. The Inside-Out option involves teachers coming out of their classrooms to work collaboratively inside schools to learn and grow as professionals. Teachers are less familiar with this form of professional learning because they have less experience with it. Collaborative forms of professional learning are less formal and directed by teachers themselves. This chapter explores three forms of collaborative professional learning and points readers to resources about others.

Once teams develop goals for their work, they craft a plan of action to accomplish those goals. These plans define the content of teacher learning. What is it teachers need to know and do if students are to achieve the goals established? This is the key question. The learning content is defined by the goal; teachers themselves determine the learning processes. Yet, many teachers have not had access to self-directed forms of professional learning. They are more familiar with designs for professional learning that are done to them rather than by them.

This chapter outlines several models for professional learning that are designed for teachers learning in teams. They are processes for teachers to deepen their content knowledge and expand their repertoire of content-specific instructional strategies. What is important to note is that this form of professional learning represents a part of a comprehensive professional development program. Albeit learning in teams is the largest portion, collaborative professional learning is, of course, supplemented with learning from experts, participating in conferences, and other forms of more formal profes-

sional development.

Rick DuFour, a leading authority on professional learning communities, indicates that teachers have several essential tasks to do when they come together to work in teams. The first is to clarify what students are expected to learn. Secondly, they develop common assessments. Lastly, they determine what interventions they will create to assist students who have not met with success (2005).

Teams members working together can accomplish all three of these tasks. This is where the genuine value of collaborative professional learning emerges. Teams choose from an array of learning strategies that will help them accomplish the goals they intend to achieve, deepen their content knowledge, expand their professional practice, and accomplish their work more expeditiously.

Determining student learnings

One essential function of a learning team is to determine what students are expected to learn. This occurs by reviewing, studying, and analyzing the core content curriculum standards and the district curriculum guides to identify essential learnings. Tool 9.1 outlines a process to determine the specific content and skills embedded within the standards. With this information in hand along with some assessment of students' current understanding of the learnings, teachers can then determine what to teach, in what sequence, and to what depth and scope. NJDOE has developed a number of resources to assist teachers and curriculum developers to identify their content and skills in the NJCCCS. The resources can be accessed at www.state.nj.us/njded/aps/cccs/

Using common assessment

By developing, administering, and scoring common assessments, teachers can learn a great deal. They learn, for example, how to calibrate their expectations against those of other teachers teaching the same grade or course. They learn how other teachers assess student
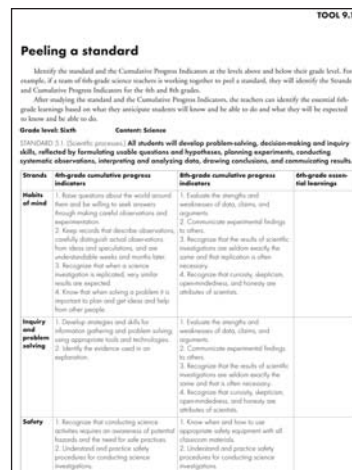

Tool 9.1

Tool 9.2

Tool 9.3

learning and can compare it to their own processes. They learn what aspects of a concept other teachers stress and how much.

Common assessments are tools that teachers develop together to assess student learning. Teachers use common assessments to ensure that they have common expectations about student work and consistency in student learning. Teachers in cross-grade-level or course teams can develop common assessments to use frequently or periodically throughout the school year. For example, Algebra teachers might invite Geometry teachers to join them in developing a common final examination for all Algebra classes since Geometry is the course that most students would take next. Fifth-grade teachers might work together to develop common assessments in social studies for their students. Teachers of foreign languages might meet with their partners in other district schools to develop common semester and final exams for their students. Tool 9.2 will help teachers think about some critical decisions they make when they construct classroom assessments. Tool 9.3, a *JSD* article written by Jay McTighe and Marcella Emberger, offers several ideas about how to collaborate on the development of assessments.

By developing common assessments, teachers clarify their expectations for students, determine what good work looks like, clarify their understanding of the stan-

Tool 9.4

Tool 9.5

Tool 9.6
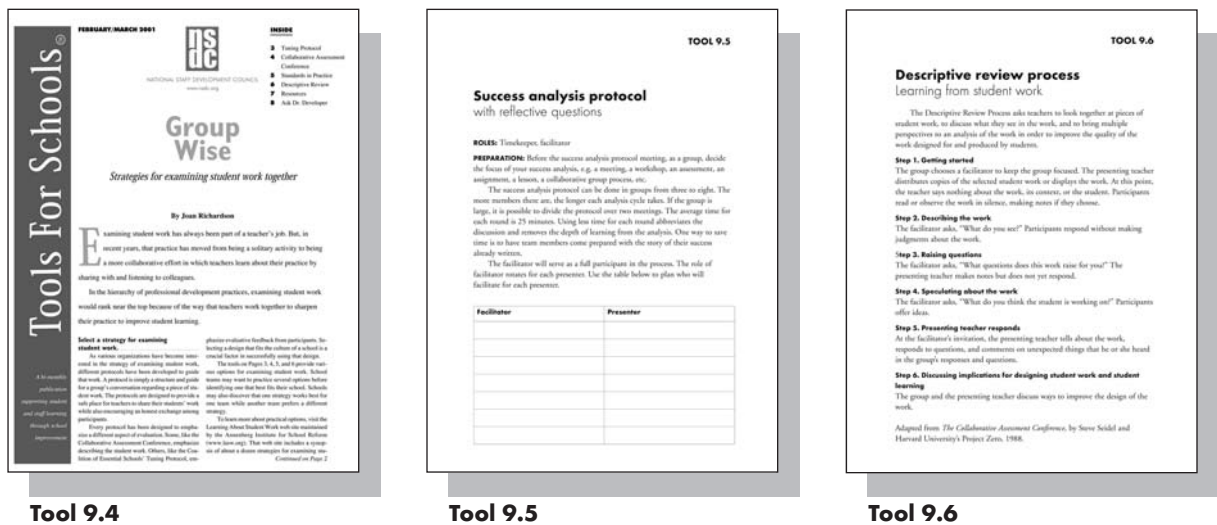
dards, and expand their assessment literacy. However, developing the assessments is only one part of the process of using common assessments. A second part is administering the assessments. Teacher establish some agreements about the window of time in which students will complete the assessments and prepare some general agreements about teachers' role in the assessment and accommodations for students who require them. With these agreements in hand, teachers then engage students in the assessment and move to the third step of common assessments.

The third step is scoring the assessments. This is done individually, in a team meeting, or shared by team members. When teachers are able to score each other's assessments or to score them together, they develop a deeper understanding of their students' learning. A recommended way to score common assessments is to have each team member bring several completed assessments to a team meeting and to score those together using a common rubric or scoring guide. By doing this, teachers can adjust or modify the scoring guide before they score all their students' work, and they can calibrate their scoring to each others' to increase consistency.

The last step — the most important step of the process of using common assessments — is reviewing the results and making instructional and curriculum decisions based on the results. For example, if teachers find that a large percentage of students have missed a key aspect of the assessment, they can plan together how to go back to review and reteach. If teachers find that one teacher's students outperformed another's, they can talk about the instructional processes and resources used by teachers and identify what contributed to the success and plan for how all teachers will integrate the successful strategies in their classrooms.

Common assessments can be the core function of a collaborative professional learning team in which teachers complete multiple cycles of developing assessments, scoring them, and making instructional decisions based on the results.

Examining student work

Similar to, yet different from using common assessments, is examining student work. Teachers can learn a tremendous amount by looking at work produced by their students and at assignments teachers used to initiate the work. Examining student work is a process of bringing one or more samples of student work to the table and using a protocol or discussion guide to comment on the work. As teachers examine their own or their students' work, they deepen their understanding of how students learn, how their colleagues structure learning assignments, and which students meet with success. These are only a few of the benefits of examining student work. Tool 9.4, an article in *Tools for Schools* by Joan Richardson, is a brief overview of what is involved in examining student work.

Three protocols are included for examining student work. The Success Analysis Protocol (Tool 9.5) looks at the strengths of student or teacher work. The Descriptive Review Analysis (Tool 9.6) looks more deeply at a piece of work. The Collaborative Assessment Conference (Tool 9.7) takes the Descriptive Review protocol a bit further. For teams with little or no experi-

Tool 9.7

Tool 9.8

Tool 9.9

ence working collaboratively, the three protocols included in this chapter are recommended as a starting point to both build a collaborative culture and to maintain some safety in

Stage of development	Safety level	Structure level
Forming	High	High
Storming/forming	High	Mid
Performing	Low	Low

cases, it is helpful to create structure to help teacher meet with success early on. In this way, teachers do not have to guess about what to do. When schools have a culture that supports col

the process. Other more complex protocols that call for critical feedback can be added after the team has developed a sense of comfort with one another and the process of sharing their own and students' work publicly.

Knowing when to use structures that ensure greater safety in the collaborative process is not a science. Sometimes when collaborative professional learning is new to a school staff, it is advisable to let teachers determine the degree of structure they want initially. In other

laboration and teachers who are more familiar with collaborative work, teachers can determine how they want to learn together.

However, if a team is in the forming stage, it is advisable to use learning strategies that have higher structure to ensure safety and success.

When a team progresses through the stages of team development, it is advisable to let the team make more decisions about how they will work together because making decisions about process as well as the content of

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At the Northern Valley School District

The Northern Valley School District in Demarest, N.J., offers teachers opportunities to engage in alternative professional development as a part of the district's differentiated supervision program. Differentiated supervision gives each staff member an opportunity to develop a plan for professional growth based upon his or her own needs. It is designed to empower staff members to take responsibility for their professional learning and to foster productive intra- and interdepartmental relationships and trust and to allow the supervisor to step into the role of coach, mentor, and resource person.

Models of professional development available to teachers include action research, collegial partnerships for specific projects related to teaching and learning, mentoring, peer coaching, interactive journals, portfolios, and other options. Integrating collaborative professional learning into the traditional professional development and supervision process is one way to embed it into routine systems.

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their work are ways a team becomes high-performing.

Conducting action research

Action research is another collaborative learning process that supports teachers in learning from their own work.

Action research is a systematic research study that teachers design and conduct in their own classrooms and schools about their work. Teachers form questions, gather data, analyze data, and reach conclusions based on their own work. Action research allows teachers to examine the impact of their teaching practices and to understand how context influences the results they achieve.

Tool 9.8, an article from *Tools for Schools*, outlines the action research process and provides some tools teachers might use while doing action research in their classrooms. Action research is especially powerful when a team of teachers gathers data about the same or related questions and combines data to create a cross-classroom research study.

Engaging in lesson study

Lesson study is yet another powerful form of collaborative learning. In lesson study, a group of teachers come together to design a lesson, observe their jointly designed lesson taught by one of the team members, debrief the lesson, and revise it. Through this process, they develop a deeper understanding of both content and pedagogy. Lesson study makes public the work teachers do each day in isolation. As a result, they gain new understanding about how students learn and about how the instructional decisions they make in planning

Tool 9.10

Tool 9.11

influence students' success. Tool 9.9, Lesson Study, an article by Joan Richardson published in *Tools for Schools,* provides useful resources to assist teachers with conducting lesson studies.

Tool 9.10, an article from *Teachers Teaching Teachers,* highlights the lesson study work Bill Jackson leads in Paterson School District in Paterson, New Jersey.

Tool 9.11 offers an overview of 21 designs for professional learning. Many of the 21 designs are appropriate for collaborative professional learning teams. Teams that know how to structure their time, choose designs appropriate to their goals, and use a variety of designs over time are more satisfied and productive.

Reference

DuFour, R. (2005). What is a professional learning community? In DuFour, R., Eaker, R. & DuFour, R. (Eds.), *On common ground: The power of professional learning communities*, pp. 31-43. Bloomington, IN: National Education Service.

TOOL 9.1

Peeling a standard

Peeling a Standard helps teachers better understand how the core curriculum content standards and the cumulative progress indicators are used to make instructional and assessment decisions. Teachers can identify essential learnings (content and skills) for their own level by examining the strands within the core curriculum content standards and the cumulative progress indicators for each strand for the grade levels below and above their current grade level. When teachers know what students are expected to know and be able to do in order to demonstrate cumulative progress indicators, they can focus instruction and assessment on essential learnings. For example, in this example, a team of 3rd-grade teachers addressing Standard 6.6 studies the 2nd and the 4th grade cumulative progress indicators for that standard to identify prior and future student learning. With this knowledge, they can identify key learnings to include in their 3rd grade curriculum to ensure that students are able to demonstrate the 4th grade cumulative progress indicators by the end of 4th grade.

Grade Level: 3rd   **Content:** GEOGRAPHY

STANDARD 6.6 (Geography)
All students will apply knowledge of spatial relationships and other geographic skills to understand human behavior in relation to the physical and cultural environment.

Descriptive statement: The study of geography is based on the principle that thinking in and understanding spatial terms will enable students to understand the many relationships of place, people, and environments. By taking an active, questioning approach to the world around them, students learn to devise their own mental world-view. As students engage in critical thinking to interpret patterns in the evolution of significant historic events and the movement of human populations on the Earth's surface, their understanding of geography, history, economics, and civics deepens. Furthermore, the use of geographic tools and technology assists students to understand the reasons for, and the economic, political and social consequences of, human impact on the environment in different areas of the world.

Strands	2nd grade cumulative progress indicators	4th grade cumulative progress indicators	3rd grade essential learnings (content and skills)
A **World in spatial terms**	**1.** Explain the spatial concepts of location, distance and direction, including: • The location of school, home, neighborhood, community, state, and country • The relative location of the community and places within it • The location of continents and oceans **2.** Explain that the globe is a model of the earth and maps are representations of local and distant places. **3.** Demonstrate basic globe and map skills.	**1.** Use physical and political maps to identify locations and spatial relationships of places within local and nearby communities. **2.** Describe and demonstrate different ways to measure distance (e.g. miles, kilometers, time). **3.** Estimate distances between two places on a map using a scale of miles. **4.** Identify the major cities of New Jersey, the United States, and the world. **5.** Identify the major countries, continents, bodies of water, and mountain ranges of the world. **6.** Locate time zones, latitude, longitude, and the global grid.	
B **Places and regions**	**1.** Describe the physical features of places and regions on a simple scale. **2.** Describe the physical and human characteristics of places.	**1.** Identify the physical and human characteristics of places and regions in New Jersey and the United States (e.g. landforms, climate, vegetation, housing). **2.** Explain changes in places and regions over time and the consequences of those changes. **3.** Describe the geography of New Jersey. **4.** Discuss factors involved in the development of cities (e.g. transportation, food, marketplace, religion, military protection).	
C **Physical systems**	**1.** Recognize that the relationship of the Earth to the sun affects weather conditions, climate, and seasons.	**1.** Describe the basic components of the Earth's physical systems, including landforms, water, erosion, weather, and climate and discuss their impact on human development.	
D **Human systems**	**1.** Identify the types of transportation used to move goods and people. **2.** Identify the modes of communication used to transmit ideas.	**1.** Describe the development of transportation and communication networks in New Jersey and the United States. **2.** Identify the distribution and characteristics of populations for different regions of New Jersey and the United States.	
E **Environment and society**	**1.** Describe the role of resources such as air, land, water, and plants in everyday life. **2.** Describe the impact of weather on everyday life. **3.** Act on small-scale, personalized environmental issues such as littering and recycling, and explain why such actions are important.	**1.** Differentiate between living and non-living natural resources. **2.** Explain the nature, characteristics, and distribution of renewable and non-renewable resources.	

Common assessment planning tool

Use this planning tool as you consider the major decisions associated with constructing student assessment.

Content and skills to be assessed	NJCCCS/CPI	Level of understanding to be assessed, e.g. knowledge, comprehension, application, analysis, synthesis, evaluation or another taxonomy of understanding	Form of demonstration (written, oral, combination, graphic, etc.)	Format of assessment (constructed response; true-false; multiple choice; demonstration, etc.)

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BY JAY McTIGHE AND MARCELLA EMBERGER

Teacher collaboration is a powerful form of professional learning. One focus for collaborative efforts is designing assessments. When teachers design assessments, give each other feedback through peer reviews, evaluate student work, and plan together for improvement, they are engaged in highly effective professional development.

Assessments have two common purposes. One purpose is evaluation. Many teachers think assessment is summative, something done at the end of instruction to evaluate what students have learned and to give them a grade.

A second purpose of assessment is closer to the teaching-learning process. Rick Stiggins (2002) distinguishes between the two purposes as assessment *of* learning (summative/evaluative) and assessment *for* learning (ongoing, formative, and informative). Assessments *for* learning are diagnostic rather than summative. They give both teachers and students feedback to help guide

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their actions — revising, reteaching, focusing practice.

Ongoing assessments are a vital part of the teaching-learning cycle. Without continuous assessment, student learning is limited to a one-shot, hit-or-miss event — maybe they get it, maybe they don't. Ongoing assessments give teachers feedback so they can adjust their instruction. Ongoing assessments help students focus their efforts. The most effective teachers use assessments for *learning* in addition to evaluation.

FORM AND FUNCTION

The format of assessments should match the goals being assessed and

the reason for assessing.

How does a teacher know that students *really* understand? The evidence is there when students can *apply* what they are learning to new situations and *explain* their responses (show their work, support their reasoning, justify their answers).

Performance assessments that use real situations that reflect the world beyond the classroom are called "authentic." These tasks are typically open-ended to allow students more choices and to encourage a variety of responses, but they still are judged against established criteria.

Because classroom, school, and district assessments are less influenced

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by the factors that constrain standardized tests (large-scale implementation, limited time, etc.), teachers can use performance assessments both for both diagnosis (feedback) and evaluation. Of course, teachers can and should also use other assessments such as selected-response quizzes and tests, observations, and portfolios of student work to provide a complete picture of a student's learning.

Once teachers have recognized the value of performance assessments, they face the challenge of finding or creating tasks and scoring rubrics.

Teachers use three strategies to collaborate to develop performance tasks and assessments:

1. Collaboratively design tasks and assessments based on desired learning results.
2. Have peers review tasks and assessments for feedback on designs.
3. Conduct a group evaluation of student work elicited by the tasks.

STRATEGY 1:
Collaborative design
   Step 1: Form the group
   Anyone can encourage a group to form to work collaboratively to design performance tasks and assessments, give feedback, and produce a portfolio of usable performance assessments. The optimal group size is three to five people teaching the same grade level or subject area. They do not need to be from the same school or even the same district. Some teams that cross subject areas may collaborate to develop multidisciplinary performance tasks.

> **Teachers use three strategies to collaborate to develop performance tasks and assignments.**

   Step 2: Meet as a team
   A facilitator helps participants address:
1. The goals or content standards being assessed.
2. The task students will perform to

demonstrate their understanding and proficiency.
3. The criteria by which the student's performance will be judged.
   Step 3: Decide which standards to measure
   Each team, guided by the facilitator, decides which goals or content standards can appropriately be assessed. Not every goal requires a performance assessment. Performance assessments are needed when the goals are procedural (involve skills or processes, such as problem solving) or call for students to understand concepts and principles. For example, if the standard expects students to be able to identify state capitals or to know chemical symbols, multiple-choice or fill-in-the-blank formats provide appropriate evidence of learning.
   Step 4: Create a task
   Teachers develop an authentic situation through which students will demonstrate their knowledge and skills. The team can brainstorm tasks using the G.R.A.S.P.S. framework (Wiggins & McTighe, 1998):
   Goal: What is the purpose, challenge, or problem (to persuade, to

inform, to entertain, to sell)?
   Role: What real-world role will the student assume (editorial writer, museum director, artist, business owner)?
   Audience: For whom is the student working (newspaper reader, museum visitor, viewer, client/customer)?
   Situation: What is the situation or context (a controversial community issue that must be resolved)?
   Product/Performance: What will students make or do to accomplish the goal (a letter to the editor, display, mural, business proposal)?
   Standards: How will the product or performance be judged as successful?
   Step 5: Develop evaluative criteria
   The team develops criteria that teachers and students will use to appraise students' work on the performance tasks. For most complex performance tasks, designers should use three types of criteria:
   1. Criteria to assess the *degree of understanding or proficiency* (accuracy, thoroughness, thoughtfulness, efficiency).

Assessing understanding

A primary goal of teaching is to help students understand the important ideas and processes identified in content standards. Classroom, school, and district assessments should provide evidence of student understanding.

While it makes sense to familiarize students with the format of state standardized tests, fixating on the format is counterproductive in the long run. The best way to raise test scores over time is to:

1. Teach the key ideas and processes outlined in content standards in meaningful and engaging ways (this assumes the test is aligned with standards);

2. Use local performance-based assessments (more rigorous than one-shot, standardized tests) to find out whether students understand the content;

3. Raise the standards and quality of local assignments and assessments using the processes outlined here; and

4. Use the results of ongoing, authentic assessments and other evidence to plan improvements, rather than waiting for the once-a-year standardized test score report.

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2. Criteria to assess *work quality* (well-crafted, mechanically correct, skilled, neat, creative).

3. Criteria related to *impact* or *result* (Was the letter to the editor persuasive? Was the museum display informative? Did the scientific investigation actually test the hypothesis? Was the role play convincing?).

These criteria are the basis for developing a scoring rubric. The performance scale — for example, one to four — includes descriptions of the level of understanding, proficiency, work quality, and impact.

STRATEGY 2:
A peer review process

We rarely review and critique units and assessments teachers have designed. Structured peer reviews, guided by design standards, can help teachers improve designs.

Peer review teams can be homogeneous — based on content areas or grade levels — or heterogeneous. Both have advantages. In general, homogeneous groups provide more specific feedback about content-oriented criteria, such as whether a task matches content requirements (task validity) and is authentic (related to life outside the classroom). Heterogeneous groups can provide information about whether the task is clear, potentially engaging to students, and easily implemented. Administrators and teachers who have not helped design the task are useful members of the review team.

Groups of three to five members work well.

For peer review to be successful, team members must have a high level of trust so they feel safe when giving and receiving feedback. Creating trust takes time and is built in part through practicing the skills of providing descriptive, non-evaluative feedback.

One method for building trust is practicing peer review sessions using sample assessment tasks and rubrics. The skills of giving and receiving feedback need to be modeled and practiced before initiating the process with teachers' own designs.

Peer review is more successful when:

1. Feedback is specific, descriptive, and guided by the criteria in design standards. For example, instead of saying, "We liked your performance task," a group member might say, "The task is authentic because it asks students to apply their knowledge in a 'real world' way."

2. Feedback is not personalized. The reviewers provide feedback to help improve the task and rubric and do not praise or criticize the designers.

3. The designer listens to the feedback and asks clarifying questions. Designers should not try to explain or defend their work. After the peer review, designers can decide whether to incorporate the feedback.

4. Meetings stay on schedule. Participants must guard against tangential discussions or sidebar conversations.

STRATEGY 3:
Anchor evaluation
in student work

When teachers use common performance assessment tasks and rubrics, they collect data in the form of student products and performances that can be used to determine how well students understand what they are learning. Focusing on student work increases teachers' ownership of student achievement since the work is a result of their own curriculum, assessment, and teaching.

Step 1: Reconvene teams

Reconvene the teams that designed the performance assessments and rubrics after teachers have had a

> Excerpted from *Powerful Designs for Professional Learning,* edited by Lois Brown Easton (Oxford, OH: NSDC, 2004). Available through the NSDC Online Bookstore, http://store.nsdc.org.

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chance to use them in the classroom. Each teacher should bring five to eight randomly selected samples of student work resulting from the assessments, with enough copies of each sample for every team member. If the assessment required a performance, it should be ready to view on a videotape or listen to on an audiotape. The sample student work should not have a visible score.

The teams examine the student work to be able to describe, rather than score or grade it, so that those who created the performance assessments and rubrics can make adjustments that are likely to improve the results.

Anchors give teachers and students clear targets that help guide their work.

Step 2: Describe the student work on the performance task

Working with one performance assessment and resulting student work — one sample at a time — each team describes what is in students' work. A recorder makes notes on chart paper so the group can use comments later. The group asks itself to:

Describe:

- What knowledge and skills are assessed?
- What kinds of thinking are required (recall, interpretation, evaluation)?
- Are these the results I (we) expected? Why or why not?
- In what areas did the student(s) perform best?
- What weaknesses are evident?
- What misconceptions are revealed?
- Are there any surprises?
- What anomalies exist?
- Is there evidence of improvement or decline? If so, what caused the changes?

Evaluate:

- By what criteria am I (are we) evaluating student work?
- Are these the most important criteria?

Facilitator's checklist

To help ensure the design process is successful, the facilitator should:

1. Use computers when designing tasks and rubrics to make editing and distributing them easier. Meet in or near a media center or computer lab with Internet access.

2. Provide teachers with relevant resources to support their design work. For example, have content standards documents and curriculum frameworks on hand, and provide sample tasks and rubrics to serve as models.

3. Help teachers use Internet resources related to assessment. Teachers are masters at adapting ideas and can build on others' ideas rather than starting with a blank slate.

4. Schedule multiple opportunities for the group to meet for informal sharing and feedback sessions throughout the design process. A formal peer review session toward the end of a design workshop should not be the only opportunity for feedback. A gallery walk offers a practical and energizing way to share and get feedback during any part of the process. For a gallery walk, design teams post their draft performance tasks and rubrics on a wall and participants view the works in progress, offering feedback and suggestions anonymously with sticky notes posted to the charts.

- How good is "good enough" (what is the performance standard)?

Interpret:

- What does this work reveal about student learning and performance?
- What patterns are evident?
- What questions does this work raise?
- Is this work consistent with other achievement data?
- Are there different explanations for these results?

Identify improvement actions:

- What teacher action(s) are needed to improve learning and performance?
- What student action(s) are needed to improve learning and performance?
- What parent action(s) will support improved learning and performance?

After about 15 minutes of describing, evaluating, and interpreting the work, the group is ready to anchor the work to the scoring levels on the rubric.

Step 3: Anchor the work

The next step for the reconvened teams is anchoring. Anchoring means selecting examples of student work to represent each of the score points on an evaluation scale. These examples illustrate the quality or proficiency expected at each level based on established criteria. Anchors help teachers understand and apply the criteria and standards consistently when they evaluate student products or performances. Anchors give teachers and students clear targets that help guide their work and help students understand and apply the criteria when they are evaluating themselves or doing peer evaluations.

There are two models for anchoring the scoring system for performance assessments.

Model 1 uses established scoring criteria on the rubric, and each team evaluates student responses, products, or performances according to the preset criteria. Next, the group sorts student work by score. The group then selects responses, products, or performances for each score point that

Design standards

Design standards define the qualities of effective curriculum and assessment. Design standards are a reference point during design to be sure the assessment meets the standards, to help teachers review and refine drafts, and which can be used by independent reviewers (such as a curriculum committee) before assessments are distributed to other teachers.

The Maryland Assessment Consortium developed these design standards:

To what extent does the performance assessment task:

1. Assess student performance on the identified content standard(s) and benchmarks?

2. Establish a meaningful context based on issues, problems, themes, or student interests?

3. Require the student to apply thinking skills or processes rather than merely recall factual information?

4. Establish criteria linked to the standards/benchmarks for evaluating student products and performances?

5. Contain activities likely to engage students?

6. Provide clear, unambiguous directions to students?

7. Contain accurate and credible information?

8. Use interrelated activities to achieve its purpose?

9. Allow for easy use in the classroom?

10. Provide feedback to teachers and students about identified goals or content standards?

11. Integrate subject areas?

12. Provide opportunities for students to reflect on and self-evaluate their performance?

13. Allow students to revise?

14. Allow for a choice of products or performances?

15. Use technology appropriately?

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illustrate the criteria for that score. With only five to eight samples, the group may not find an example for each score. Use Model 1 when a performance task and the scoring rubric(s) have been validated through field testing, reviews, and revision.

Model 2 uses student responses, products, or performances to identify or refine the scoring criteria. The group sorts student responses into three (high, medium, low) or four (excellent, good, fair, poor) levels based on general quality. The group reviews each set and determines the distinguishing characteristics of the responses. They then develop criteria for each level and select several responses to illustrate those criteria. Use Model 2 when a task has been used for the first time and no rubric exists or the rubric is a draft.

The reconvened teams evaluate the student responses, products, or performances. The team member submitting the performance assessment

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and rubric for anchoring does not share the scores the samples received.

At the same time, teams should examine the performance assessment task itself, particularly the directions given to students, to see if the directions lead students to produce the desired outcome. Task directions that are vague or misleading may cause students to prepare a response that fits neither the intention of the task nor the criteria on the rubric.

Tips for successful anchoring

1. Use anchoring to refine performance standards or create them if a rubric has not been designed. When educators choose examples of student work that illustrate the various levels in a rubric, they can easily answer the question, "How good is good enough?" Anchors also help scorers judge work more consistently and help students assess their own work more accurately. With tangible illustrations of what quality work looks like, teachers and students can understand the specific qualities

> **Ultimately, students benefit when educators work together on assessments.**

of effective work and get beyond general statements, such as "well-organized" or "persuasive."

2. Select several examples for each level. A single example suggests that there is just one best answer or pathway rather than several approaches to an authentic task (diverse excellence). Using several anchors provides a richer set of examples to guide teachers and students.

3. Collect and publish the anchor examples at the grade, school, or district level to promote more consistent evaluations and to help teachers explain scores and grades to parents and students. Many teachers report that grading quibbles virtually disappear when clear rubrics and anchors are available.

CONCLUSION

Collaborative designs and peer reviews honor and enhance teachers' professionalism, expertise, and collegial learning. Working in teams to evaluate student work against established criteria, identify models of excellence (anchoring), and plan

needed improvements promotes a results-oriented culture of quality.

By designing performance assessments, educators enhance their understanding of content standards and of the evidence needed to show that students really understand the important ideas and processes contained in those standards. Teachers discover that the connection between curriculum and assessment becomes clearer, teaching is more sharply focused, and evaluation is more consistent.

Ultimately, students benefit by having defined learning goals, opportunities to demonstrate their understanding in more authentic ways, and advance knowledge of the evaluation criteria so they have greater purpose in their learning.

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Group Wise

Strategies for examining student work together

By Joan Richardson

Examining student work has always been part of a teacher's job. But, in recent years, that practice has moved from being a solitary activity to being a more collaborative effort in which teachers learn about their practice by sharing with and listening to colleagues.

In the hierarchy of professional development practices, examining student work would rank near the top because of the way that teachers work together to sharpen their practice to improve student learning.

Select a strategy for examining student work.

As various organizations have become interested in the strategy of examining student work, different protocols have been developed to guide that work. A protocol is simply a structure and guide for a group's conversation regarding a piece of student work. The protocols are designed to provide a safe place for teachers to share their students' work while also encouraging an honest exchange among participants.

Every protocol has been designed to emphasize a different aspect of evaluation. Some, like the Collaborative Assessment Conference, emphasize describing the student work. Others, like the Coalition of Essential Schools' Tuning Protocol, emphasize evaluative feedback from participants. Selecting a design that fits the culture of a school is a crucial factor in successfully using that design.

The tools on Pages 3, 4, 5, and 6 provide various options for examining student work. School teams may want to practice several options before identifying one that best fits their school. Schools may also discover that one strategy works best for one team while another team prefers a different strategy.

To learn more about practical options, visit the Learning About Student Work web site maintained by the Annenberg Institute for School Reform (www.lasw.org). That web site includes a synopsis of about a dozen strategies for examining stu-

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Strategies for examining student work together

Continued from Page One
dent work and links to learn more about each of them.

Opt for anonymity.

To introduce the process and to help teachers become comfortable with the concept, consider doing one or two practice sessions.

Bring in student work that does not belong to any of the participants. Visit the Learning about Student Work web site (www.lasw.org) and look for samples of student work that could be used for this practice session. Or, tap colleagues at another school for samples of student work.

"Teachers are often quite shy about bringing their own student work to the table. They feel very apologetic. They feel that others might castigate them for the errors, for work that's not perfectly done," said Lois Easton, director of professional development at the Eagle Rock School and Professional Development Center in Estes Park, Colo. Easton does extensive work with tuning protocols developed by the Coalition of Essential schools.

Practicing on student work in which they have no investment can help teachers feel more comfortable about the conversations they might hear regarding the work of their students.

Select a project, task, or assessment that addresses one of the schoolwide goals for student performance.

The task should require that students produce something that demonstrates what they have learned. This could be a long-term project or a short-term task. Whatever the final result, the student product or performance should be something significant, not a worksheet, quiz, or test.

Geneva City Schools in Geneva, N.Y., wanted students to do more writing in math as a way to improve their ability to explain how they solved math problems. So teachers assembled by grade

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level to study students' math journals, said Jody Hoch, now director of mathematics for the Rush-Henrietta Central School District in upstate New York.

Collect documents that will help the study group participants understand the project or task.

These might include the initial assignment, scoring/grading criteria (or rubrics), objectives of the assignments, exemplars, models, timelines, checklists, etc. Think about other key information participants will need to understand the project or task and that can be shared succinctly.

The presenting teacher should be prepared to briefly describe the context of the student work. The documents listed above would be used to illustrate his or her points during that presentation.

Select samples of student work that demonstrate authentic student responses to the project or task.

Choose two or three samples to provide contrast. Teachers often find that a sample of work that shows promise but is not a stellar response to the assignment provides the best basis for feedback. Work selected may include final products, drafts, reflections, etc.

The Annenberg Institute for School Reform suggests a variety of ways to select student work samples:
■ Written work (or artwork) from several students in response to the same assignment.
■ Several pieces of work from one student in response to different assignments.
■ One piece of work from a student who completed the assignment successfully and one piece from a student who was not able to complete the assignment successfully (same assignment for both).
■ Work done by students working in groups (include work of at least two groups that were given the same assignment).
■ Videotape, audio tape, and/or photographs of students working, performing, or presenting their work. This might be

particularly useful for very young children who haven't yet acquired adequate written communication skills.

Watch the details.

If possible, remove student names from the samples.

Make enough copies of the student work so that each participant has his or her own copy. Ensure that the facilitator knows in advance about any unique types of student work, such as sculpture or an entire portfolio of work, that are not easily duplicated. That will enable the facilitator to adapt the format accordingly.

If the student work is a video, a five-minute clip is usually sufficient to demonstrate the work.

Prepare a focusing question.

The presenting teacher should prepare a "focusing question" about the work that addresses a real interest or concern. Questions typically focus on either inputs (the assignment, teacher's support of student performance) or outputs (quality of student work, teacher's assessment of the work).

A broader question may elicit a wide range of feedback — and this may be desirable. For example: *How can I support higher quality presentations?* (input) *What are the strengths and weaknesses you see in the student presentations?* (output)

A narrower question might provide the kinds of feedback the teacher finds most useful. For example: *How can my prompt bring out more creativity in the students' work?* (input) *What evidence is there in the student work of mathematical problem solving?* (output)

Remember, even with a narrower focus question, participants will offer a range of feedback — on and off the question.

> See the February 2001 issue of *Results* to read about the use of "tuning protocols," one strategy for examining student work.

TOOL 9.5

Success analysis protocol
with reflective questions

ROLES: Timekeeper, facilitator

PREPARATION: Before the success analysis protocol meeting, as a group, decide the focus of your success analysis, e.g. a meeting, a workshop, an assessment, an assignment, a lesson, or a collaborative group process.

The success analysis protocol can be done in groups from three to eight. The more members there are, the longer each analysis cycle takes. If the group is large, it is possible to divide the protocol over two meetings. The average time for each round is 25 minutes. Using less time for each round abbreviates the discussion and removes the depth of learning from the analysis. One way to save time is to have team members come prepared with the story of their success already written.

The facilitator will serve as a full participant in the process. The role of facilitator rotates for each presenter. Use the table below to plan who will facilitate for each presenter.

Facilitator	Presenter

STEPS FOR SUCCESS ANALYSIS PROTOCOL

1. **Identify a success.** *Time: 5 minutes.*
    Reflect on and write a short description of a success. Note what it is about the practice that makes it so successful. Be sure to write about what made this experience different from others like it.

2. **Describe the success.** *Time: 5 minutes.*
    The first presenter shares his or her story of success in as much detail as possible. Others take notes.

3. **Ask clarifying questions.** *Time: 3-5 minutes.*
    The group asks clarifying questions about the details of the success to better understand it.

4. **Reflect on the success (Presenter).** *Time: 5 minutes.*
    With other team members listening only, the facilitator asks the presenter to discover what made this experience so successful by asking questions designed to stimulate the analysis. Some suggested questions are identified below:
    *   What was different about this situation?
    *   What did you contribute to this success?
    *   What did others contribute to this success?
    *   What knowledge, skills, past experiences helped you in this situation?
    *   Some people think things happen for a reason. What do you think was the reason you experienced this success at this time?

5. **Reflect on the success (Team members).** *Time: 10 minutes.*
    Team members discuss what they heard the presenter say, offer additional insights, and share what they learned from the success analysis. The presenter remains silent and takes notes if desired.

6. **Reflect on the analysis (Presenter).** *Time: 5 minutes.*
    The presenter reflects on what he or she heard the team members say in their discussion and what he or she has learned from the analysis.

7. **Continue the protocol.**
    With another team member serving as the presenter and as the facilitator, repeat steps 2-6 for as many other team members as possible.

8. **Debrief the protocol.** *Time: 5-7 minutes.*
    After completing all presenters' analyses, the team discusses the use of the protocol. They may use questions such as those below to guide their discussion:
    *   What worked well for us?
    *   What caused confusion?
    *   From a facilitator's perspective, what was challenging for team members?
    *   From a presenter's perspective, what was challenging?
    *   How might we improve the protocol or our use of it to deepen our learning?
    *   Where else might we use this process?
    *   How can we apply what we learned from this process to other situations?

Adapted from National School Reform Faculty, February 2002.

TOOL 9.6

Descriptive review process
Learning from student work

The Descriptive Review Process asks teachers to look together at pieces of student work, to discuss what they see in the work, and to bring multiple perspectives to an analysis of the work in order to improve the quality of the work designed for and produced by students.

Step 1. Getting started
The group chooses a facilitator to keep the group focused. The presenting teacher distributes copies of the selected student work or displays the work. At this point, the teacher says nothing about the work, its context, or the student. Participants read or observe the work in silence, making notes if they choose.

Step 2. Describing the work
The facilitator asks, "What do you see?" Participants respond without making judgments about the work.

Step 3. Raising questions
The facilitator asks, "What questions does this work raise for you?" The presenting teacher makes notes but does not yet respond.

Step 4. Speculating about the work
The facilitator asks, "What do you think the student is working on?" Participants offer ideas.

Step 5. Presenting teacher responds
At the facilitator's invitation, the presenting teacher tells about the work, responds to questions, and comments on unexpected things that he or she heard in the group's responses and questions.

Step 6. Discussing implications for designing student work and student learning
The group and the presenting teacher discuss ways to improve the design of the work.

Adapted from *The Collaborative Assessment Conference,* by Steve Seidel and Harvard University's Project Zero, 1988.

TOOL 9.7

Collaborative assessment conference
Overview

A piece of student work has the potential to reveal not only the student's mastery of the curriculum's goals, but also a wealth of information about the student him/herself: his/her intellectual interests, his/her strengths, and his/her struggles. The Collaborative Assessment Conference was designed to give teachers a systematic way to mine this richness. It provides a structure by which teachers come together to look at a piece of work, first to determine what it reveals about the student and the issues s/he cares about, and then to consider how the student's issues and concerns relate to the teacher's goals for the student.

The last part of the conversation — the discussion of classroom practice — grows out of these initial considerations.

The structure for the conference evolved from three key ideas:

First, students use school assignments, especially open-ended ones, to tackle important problems in which they are personally interested. Sometimes these problems are the same ones that the teacher has assigned them to work on, sometimes not.

Second, we can begin to see and understand the serious work that students undertake only if we suspend judgment long enough to look carefully and closely at what is actually in the work rather than what we hope to see in it.

This description is excerpted, with adaptations, from Blythe, T., Allen, D., & Powell, B. (1999). *Looking Together at Student Work.* New York: Teachers College Press.

Third, we need the perspective of others — especially those who are not intimate with our goals for our students — to help us to see aspects of the student and the work that would otherwise escape us. We also need others to help us generate ideas about how to use this information to shape our daily practice.

Since 1988, when Steve Seidel and his colleagues at Harvard Project Zero developed this process, the Collaborative Assessment Conference has been used in a variety of ways: to give teachers the opportunity to hone their ability to look

closely at and interpret students' work; to explore the strengths and needs of a particular child; to reflect on the work collected in student portfolios; to foster conversations among faculty about the kind of work students are doing and how faculty can best support that work.

Presenting teacher

In the Collaborative Assessment Conference, the presenting teacher brings a piece of student work to share with a group of five to ten colleagues (usually other teachers and administrators). The process begins with the presenting teacher showing (or distributing copies of) the piece to the group. Throughout the first part of the conference, the presenting teacher says nothing, giving no information about the student, the assignment, or the context in which the student worked.

Through a series of questions asked by the facilitator, the group works to understand the piece by describing it in detail and looking for clues that would suggest the problems or issues or aspects of the work with which the student was most engaged. They do this without judgments about the quality of work or how it suits their personal tastes. The facilitator helps this process by asking participants to point out the evidence on which they based the judgments that inevitably slip out. For example, if someone comments that the work seems very creative, the facilitator might ask him or her to describe the aspect of the work that led him or her to say that.

Second part

In the second part of the conference, the focus broadens. Having concentrated intensively on the piece itself, the group, in conversation with the presenting teacher, now considers the conditions under which the work was created as well as broader issues of teaching and learning. First, the presenting teacher provides any information that s/he thinks is relevant about the context of the work. Relevant information might include:
• Description of the assignment;
• Response to the discussion; answers to questions (though s/he does not have to respond to all the questions raised in the first part of the conference);
• Description of other work by the child; and/or
• Comments about how his/her own reading or observation of the work compares to that of the group.

Next

Next, the facilitator asks the whole group (presenting teacher included) to reflect on the ideas generated by the discussion of the piece. These might be reflections about specific next steps for the child in question, ideas about what the participants might do in their own classes or thoughts about the teaching and learning process in general. Finally, the whole group reflects on the conference itself.

The following steps are a working agenda for a Collaborative Assessment Conference. The time allotted for each step of the conference is not fixed, since the time needed for each step will vary in accordance with the work being considered. At each stage, the facilitator should use his or her judgment in deciding when to move the group on to the next step.

Typically, Collaborative Assessment Conferences take from 45 to 75 minutes.

Steps

Collaborative assessment conference protocol

1. Get started
• The group chooses a facilitator who will make sure the group stays focused on the particular issue addressed in each step.
• The presenting teacher puts the selected work in a place where everyone can see it or provides copies for the other participants. S/he says nothing about the work, the context in which it was created, or the student, until Step 5.
• The participants observe or read the work in silence, perhaps making brief notes about aspects of it that they particularly notice.

2. Describe the work
• The facilitator asks the group, "What do you see?"
• Group members provide answers without making judgments about the quality of the work or their personal preferences.
• If a judgment emerges, the facilitator asks for the evidence on which the judgment is based.

3. Ask questions about the work
• The facilitator asks the group, "What questions does this work raise for you?"
• Group members state any questions they have about the work, the child, the assignment, the circumstances under which the work was carried out, and so on.
• The presenting teacher may choose to make notes about these questions, but s/he is does not respond to them now – nor is s/he obligated to respond to them in Step 5 during the time when the presenting teacher speaks.

4. Speculate about what the student is
   working on
• The facilitator asks the group, "What do you think the child is working on?"
• Participants, based on their reading or observation of the work, make suggestions about the problems or issues that the student might have been focused on in carrying out the assignment.

5. Hear from the presenting teacher
• The facilitator invites the presenting teacher to speak.
• The presenting teacher provides his or her perspective on the student's work, describing what s/he sees in it, responding (if s/he chooses) to one or more of the questions raised, and adding any other information that s/he feels is important to share with the group.
• The presenting teacher also comments on anything surprising or unexpected that s/he heard during the describing, questioning and speculating phases.

6. Discuss implications for teaching and learning
• The facilitator invites everyone (the participants and the presenting teacher) to share any thoughts they have about their own teaching, children's learning, or ways to support this particular child in future instruction.

7. Reflect on the collaborative assessment
   conference

The group reflects on the experiences of or reactions to the conference as a whole or to particular parts of it. Consider these questions:
• What did you see in the work that was interesting or surprising?
• What did you learn about how this student thinks and learns?
• What in the process helped you to see and learn?
• What new perspectives did your colleagues provide?
• What thoughts about designing and assessing student work did this process raise for you?
• What will you use in your classroom from this session?

It is helpful to engage in personal reflection about your own thinking after examining student work. Consider these questions:
• Why do I see student work in this way? What does this tell me about what is important to me? What does this tell me about what the student has learned?
• What patterns occurred in your perceptions or thinking?
• What questions did your colleagues' comments raise for you as a designer of student work?

8. Thank the presenting teacher.

Developed by Steve Seidel and colleagues at Harvard Project Zero

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Teacher research leads to learning, action

By Joan Richardson

As a teacher in a Madison, Wis., middle school with a changing enrollment, Ginny Kester wondered how a sense of belonging affected the achievement of African-American students.

Instead of having idle conversations with friends and colleagues about this question, Kester embarked on a systematic review of the relationships between teachers, parents, and students in her school. She interviewed teachers, parents, and students individually and in groups. In her year-long project, Kester discovered that "the stronger the bond between a teacher and an African-American student, the greater the impact a teacher would have on a student's achievement."

In the busyness of a school day, teachers typically have little time to pause and examine the work they do. Increasingly, as Kester did, teachers are turning to action research as a way to create time and space to reflect on their work.

Action research is "a process where participants—who might be teachers, principals, support staff—examine their own practice, systematically and carefully, using the techniques of research," according to Cathy Caro-Bruce who leads the extensive action research efforts in the Madison (Wis.)

Metropolitan School District. Caro-Bruce is author of a forthcoming NSDC book, *The Action Research Facilitator's Handbook*. (See Page 7 for details.)

In her experience, action research is an effective way for teachers to learn because teachers explore topics related to their work and in which they already have an interest. But Caro-Bruce also says action research has hidden benefits for teachers. "What teachers learn from the process is as critical as what they learn from the results," she said.

Using the techniques of research, teachers* draft questions, collect data, analyze data, and act on what they learn. Acting on what's been learned is an essential part of action research, says Caro-Bruce. Merely answering a question is only going part of the way.

Unlike traditional forms of research, action research is more responsive to the discoveries that researchers make along the way. That means action researchers must be flexible and willing to follow their questions wherever the information takes them. "Action research is not a linear process. It's not something that's nice and neat and tidy. It's messy, but our

> ** Teachers is used throughout this article as a shorthand for any adult working in a school. Action researchers can include paraprofessionals, principals, custodial staff, librarians, and, when appropriate, students.*

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Teacher research leads to learning, action

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worlds are messy too,'' said Caro-Bruce.

Action research can be done alone or in a group. The group can be a few individuals, an entire school, or even an entire district. Caro-Bruce believes action research is best done in a group of 8 to 10 persons, each studying a different question. "When you work with a group, you get exponential effects. Groups provide a way to learn about your own question as well as the questions from everyone else in that group. So it becomes a much broader learning experience,'' she said.

Caro-Bruce outlines five steps for action research projects:

PREPARE TO BEGIN.

Before teachers write their research questions, they must become familiar with the action research process. Several resources recommended on Page 7 could be used for jigsaw readings to acquaint participants with what to expect from the process.

If others in your district have done action research, ask them to describe for the group what they did and learned.

"Help them understand that this is a flexible, fluid process that they will impact and that will impact them,'' Caro-Bruce said.

WRITE THE QUESTION.

Caro-Bruce recommends that a district—or a school—identify broad priority areas for action research and allow teachers to volunteer to explore topics that most interest them. For example, a district might decide to support action research on experiential education, brain-compatible teaching and learning, special education, and issues of diversity and learning.

Each group assembles and teachers identify areas of greatest concern for them. For example, a teacher who enters the diversity group might want to explore the question posed by Ginny Kester. Another might want to explore relationships with parents who do not speak English. (The

tool on Page 3 offers a series of open-ended questions to help participants narrow their concerns.)

As participants write their initial questions, other group members should provide feedback to help refine the questions. (The tool on Page 4 is one strategy for doing this.)

In addition, teachers should ask others outside the group questions such as these:
* What do you think about this question?
* Is this a worthwhile question to pursue?
* What suggestions can you offer to improve it?

As teachers reflect on the responses, they should refine their questions accordingly.

COLLECT DATA.

Data to answer the question can come from many sources. The sources will vary according to the question. In some situations, for example, the teacher will need "hard" data such as test results, parent-teacher conference participation, attendance, demographics, and financial records. Other teachers will need "soft" data from interviews with students, parents, and teachers; classroom observations; examining student work and lesson plans.

Caro-Bruce offers three general tips about data collection:
* Collect data from at least three sources. That will bolster the credibility of your final conclusion.
* Keep a data log, recording when all information was collected, time and place, and the data itself.
* Raw data is not very useful to anyone except the original researcher. In order to share your work, data must be organized and made presentable and understandable for persons unfamiliar with the project.

ANALYZE DATA.

Be systematic and objective as you examine your data. Here's a rough outline to follow:

* Jot down the themes, patterns, and big ideas in the data you've collected.
* Reduce your large list to a smaller one with three to five themes.
* Label information according to relevant themes. Create sub-groups where appropriate.
* Make notes as you go along.
* Review your information. Identify points which occur more frequently and are the most powerful.
* Write up your major points. Match collected data with each major point. (The tool on Page 6 presents a format for this.)

PLAN YOUR NEXT STEP.

What sets action research apart from traditional research is the expectation that researchers will do something with what they have learned. Caro-Bruce suggests several questions to help determine the next step:
* How do your conclusions differ from what you thought you would learn?
* What actions might you take based on your conclusions?
* What new questions emerge for you from the data?

Caro-Bruce warns school leaders not to be discouraged if teachers initially show little interest in action research. When action research was introduced in Madison in the mid-1980s, only two teachers signed up for a course to learn more about it. But teachers became more familiar with the process and the results and now 75 to 80 teachers a year do action research projects in Madison.

Another indicator of its growing acceptance in Madison is the financial support for action research. Initially, it was supported solely by staff development money; this year, the eight action research groups are funded out of seven different budgets.

"It's taken a long time to get to this point. Now, it's part of our culture. When we wonder about something, action research surfaces very naturally, very easily, as one way to explore the topic,'' she said.

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Starting points

DIRECTIONS: This exercise will aid participants in thinking about the question that will guide their research. Prepare enough copies of this page to distribute to each participant. Participants should privately respond to each open-ended question. The facilitator then leads a discussion about ideas generated through this exercise.

TIME: 15 minutes for initial writing, up to an hour for sharing the responses.

I would like to improve:

I am perplexed by:

Some people are unhappy about:

I'm really curious about:

I want to learn more about:

An idea I would like to try in my class is:

Something I think would really make a difference is:

Something I would like to do to change   **is:**

Right now, some areas I'm particularly interested in are:

Source: Action Research Facilitator's Handbook by Cathy Caro-Bruce. Oxford, Ohio: NSDC, 2000. See Page 7 for ordering information.

GUIDELINES FOR DEVELOPING A QUESTION

Action researchers in Madison, Wis., generated this list of suggestions. A good action research question:

1. Hasn't already been answered.
2. Gets at explanations, reasons, relationships. "How does…?" "What happens when….?"
3. Is not a yes-no question.
4. Uses everyday language. Avoids jargon.
5. Is concise. Doesn't include everything you're thinking.
6. Is manageable and can be completed.
7. Is do-able (in the context of your work).
8. Is a question about which you feel commitment and passion.
9. Is close to your own practice.
10. Has tension. Provides you with an opportunity to stretch.
11. Provides a deeper understanding of the topic and is meaningful to you.
12. Leads to other questions.

*Source: Madison (Wis.) Metropolitan School District Action Research Group as it appears in **Action Research Facilitator's Handbook** by Cathy Caro-Bruce. Oxford, OH: NSDC, 2000.*

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Brainwriting

COMMENTS TO FACILITATOR: This activity will aid action researchers by providing them with new ideas and new ways of thinking about their questions. It will also give everyone practice asking questions.

MATERIALS: Felt tip markers, flip chart paper, masking tape.

TIME: One hour.

Directions

Have participants write their questions on separate pieces of flip chart paper, one question per sheet. Hang these sheets of paper around the room. *Time: 5 minutes.*

Divide the large group into smaller groups of two to three persons. Each group should review each sheet and write down at least one question aimed at helping the action researcher think more deeply or in different ways about the question. *Time: Allow 3-5 minutes per question.*

Individuals should look at their sheets and privately reflect on the questions posed by others. What new directions are they contemplating? What new ideas have been generated? *Time: 5 minutes.*

Invite each action researcher to share those new ideas/new directions with the entire group. If they haven't already done so, ask each action researcher to spend a few minutes writing down his or her observations. *Time: 20 minutes.*

ANOTHER STRATEGY FOR THE SAME GOAL:
■   Write a question on a piece of flip chart paper, hang it up in the teachers' lounge, and invite colleagues to jot down their questions.
■   In schools with active e-mail systems, teachers also could post such questions in messages to colleagues.

CHANGING OVER TIME
    Over time, action research questions will be modified. Encourage participants to keep a log of changes they make to their questions. This format could be copied and distributed periodically as a reminder or participants could be encouraged to follow this format in an action research journal.

Date:
My question at this time is:
My biggest concern is:
One thing I am learning is:
My biggest struggle is:

FIVE WHY'S ANALYSIS

When an action researcher states the problem to the group, have the group respond with this question: Why does this problem happen?

When the researcher responds, ask the same question again. Continue this pattern until the question has been asked and answered five times.

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Data collection

COMMENTS TO FACILITATOR: These questions can help a group of action researchers understand the points they must consider during data collection.

MATERIALS: Flip chart or overhead projector with transparencies.

PREPARATION: Write the Five W's and H on a flip chart or transparency to guide the discussion.

Time: One hour.

Directions

Have the group practice by choosing one person's question answering the Five W's and H about his or her question. Then, break the larger group into smaller groups of two to three persons and brainstorm.

FIVE W'S AND H

Why are you collecting the data?
- What are you hoping to learn from the data?
- What are you hoping to learn from using this particular data collection strategy?
- Is there a match between what you hope to learn and the method you chose?

What exactly are you collecting?
- What different sources of data will allow you to learn best about this topic?
- What previously existing data can you use?
- How much data do you need to collect in order to learn about this topic?

Where are you going to collect it?
- Are there limitations to collecting the data?
- What support systems need to be in place to allow the data collection to occur?
- Are there ways to build data collection into normal classroom activities?

When are you going to collect it?
- Does the plan include opportunities to collect data at different times?
- What strategies can you use to easily observe and record data during class?
- Can you afford the time to gather and record data using the strategies you've selected?

Who is going to collect the data?
- Are there data which can be generated by students?
- Do you have a colleague who can observe you as you teach or a student teacher who can assist with data collection?
- What can you do yourself without being overwhelmed?

How will the data be collected and displayed?
- How will you collect and display the quantitative data? The qualitative data?
- What plan do you have for analyzing the data?
- To whom will you present what you have learned?

Tools For Schools

ACTION RESEARCH QUESTIONS

How can I help students feel comfortable working with diverse groupings of classmates and overcome, at least part of the time, their desire to always be with their friends?

How can I more effectively facilitate independent writing in my kindergarten classroom?

How can I, a school nurse, better help classroom teachers address the complex issues of educating students with ADHD?

How can 5th grade student be encouraged to write thoughtful inquiry questions for a science fair?

How can the science department and the special education department heterogeneously group a wide variety of students in the same classroom and make it a successful experience for students and staff?

How does the Writing Workshop approach affect my students' writing and their feelings toward writing?

What kinds of assessments best help me understand and teach a particular learner with autism?

How does chronic staff absenteeism impact the education of students with cognitive disabilities at my school and how does it impact teachers and other staff?

What changes in our teaching styles, curriculum design, materials, and professional support are needed to implement a new math program in an inclusive classroom?

What classroom strategies are effective in developing student self-evaluation of their learning?

Source: Action Research Facilitator's Handbook by Cathy Caro-Bruce. Oxford, Ohio: NSDC, 2000. To order, see Page 7.

February/March 2000

Tools For Schools

Data summary

Create this template and distribute to action researchers. Have them include this template in their action research journal. This will remind them of the importance of having three sources of data before drawing any conclusions about what they have learned.

WHAT I HAVE LEARNED
DATA SOURCE #1
DATA SOURCE #2
DATA SOURCE #3

February/March 2000

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FEBRUARY/MARCH 2004

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LESSON STUDY

Teachers learn how to improve instruction

BY JOAN RICHARDSON

When Becky LaChapelle and Nancy Sundberg joined a lesson study team in Rochester, N.Y., two years ago, they were expecting to learn how to improve their ability to teach mathematics. What they didn't expect was how much they would learn about improving student learning.

"It has totally changed my practice. I don't look at a lesson the same way. Every lesson I do, whether it's a study lesson or a day-to-day lesson, I always think 'What is the student response going to be?', 'What do I want students to show so I will know they have learned this?'," said LaChapelle, math specialist at Kodak Park School in Rochester.

The process of lesson study — a practice imported to the U.S. from Japan — stands apart from many professional development practices because it focuses on "our children in our classrooms," said Sundberg, a 4th-grade teacher at the Children's School of Rochester.

In the words of Catherine Lewis, one of the leading U.S. researchers on lesson study, "tests and student work may offer information about *what* to improve, (but) lesson study also sheds light on *how* to improve."

"Lesson study" is different from "lesson planning" because it focuses on what teachers want students to learn rather than on what teachers plan to teach. In lesson study, a group of teachers develops a lesson together and ultimately one of them teaches the lesson while the others observe the student learning. The entire group comes together to debrief the lesson and often revises and re-teaches the lesson to incorporate what has been learned.

Lesson study is as much a culture as a professional development activity, said Tad Watanabe, a professor of mathematics education at Pennsylvania State University who worked with the Rochester lesson study group. Being successful at lesson study requires teachers to feel comfortable sharing with each other and observing each other teaching. Having a collaborative culture in the first place benefits a group's ability to engage in lesson study, he said. But lesson study may also show teachers the value of working together more closely.

Page 2:
7 steps of lesson study

Developing the lesson as a team signals that the lesson is owned by all participants. It is the lesson and the learning that it generates that is being evaluated during the observation, not the teacher. Observers are told to watch for evidence of student thinking, student learning, and student confusion. They make notes on what students say, whether they are collaborating, whether they are engaged during the lesson, and the work they produce as a result of the lesson.

Lesson study is one of those professional development strategies that is deceptively simple on the surface and remarkable complex as you begin to probe beneath the surface. What follows is an overview of the steps involved in lesson study, each of which can be expanded greatly.

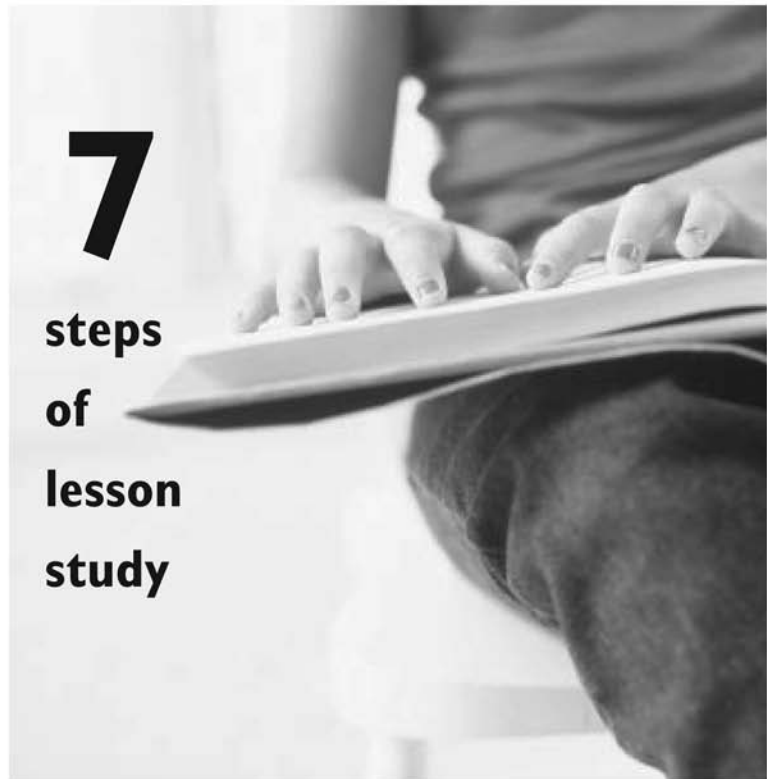### 1. Form a lesson study team.

Begin by recruiting teachers interested in the concept of lesson study and who work with a similar group of students or a similar topic. For example, lesson study teams might be composed of 4th-grade teachers who work in three different schools, teachers of 8th-grade American history in one middle school, or specialists who help other teachers integrate technology into their instruction.

In Rochester, 15 teachers from several schools worked on two different lesson studies for two years. All of the participants were elementary school teachers who had been part of a summer Thinking Math institute offered by the American Federation of Teachers. Facilitator Alice Gill, associate director in AFT's educational issues department, suggested lesson study as a way to follow-up and transfer what teachers had learned in the institute. Because Gill works in Washington, D.C., much of the team discussion about the lessons occurred online, but the team did reassemble in order to observe and debrief the completed lesson.

One of the teachers can facilitate the team or, as in Rochester's case, an outside person may be facilitator.

Each lesson study team also needs a "knowledgeable other" to provide perspective and a broader view of the issues. These individuals may also be known as outside commentator, evaluator, or outside advisor. Typically, knowledgeable others are university professors who bring a depth of expertise in the given content area but they could be districtwide curriculum specialists or specialists from a regional education agency.

Watanabe was Rochester's knowledgeable other. He cautions that anyone who is selected for that role should come in with the mindset of being a learner. "You have something to share but you have to have this notion that you are also there so you can learn from it," he said. When knowledgeable others have that learning mindset, he said, it sends a message that lesson study is a process for professional learning.

7
steps
of
lesson
study

2. Focus the lesson study.

The lesson study team selects a research theme that captures schoolwide goals as well as the academic content goals for students. If the teachers in the group are from a single grade level, they will choose a subject area in which to focus their work.

Then, the team identifies a unit or lesson on which to focus. They thoroughly discuss the unit and agree about what they are trying to achieve with the lesson. The crucial question is: *What do we want students to know and be able to do when this lesson is concluded?* In order to answer this question, teachers also must understand how this lesson links to others in the subject, both in this grade and future grades.

One of Rochester's study lessons was "What happens to area when you double the sides of a square?" The second was "What is the value of 25 in 2,500?"

This part of the work could take from one to four meetings.

3. Plan the study lesson.

The bulk of the lesson study team's work occurs in the planning of the lesson. This may require between three and six face-to-face meetings or several months of online discussion.

As they begin, teachers share and discuss their existing lessons related to the topic, explaining what they believe has been successful and where they believe the lessons could be improved.

The facilitator keeps the conversation moving by focusing the discussion on the lesson that these teachers will develop together.

Developing the lesson as a group signals that the lesson is owned by all participants. This is key because it sets the stage for the observation in which the lesson — the product of the entire team — and the learning that it generates is being evaluated and not the teacher who is presenting the lesson as a representative of the team.

continued from previous page

A crucial piece of planning the lesson includes anticipating student responses to various aspects of the lesson and preparing appropriate teacher responses: If the student does or asks X, then the teacher does Y. The group also identifies what students will say and do that will signal that they have learned what the teacher intends to have them learn.

In assisting the planning, the facilitator and the knowledgeable other walk a fine line when guiding teachers, Gill said. In her Rochester experience, for example, she realized teachers were making an inaccurate assumption. Gill refrained from pointing out their error, believing that they would learn by discovering the error on their own.

"These are adults. You have to respect what wonderful experiences they have and all of that. You can't leave it all so wide open that they wander off and over a cliff. But you do have to allow them to make the decisions," Gill said.

4. Prepare for the observation.

The lesson study team may want to invite additional observers — such as the superintendent, union president, and lead teachers — to the study lesson. The team ensures that each person at the observation knows the expectations of the lesson study and the ground rules for observing the lesson. (See Page 5.) All observers will collect data that will be shared in the debriefing. The "data" are the comments of students and the work students produce during the lesson.

In some situations, the team assigns certain observers to closely watch the work and comments of particular students. (See Page 4.)

The lesson study team prepares copies of the lesson plan, seating chart, and any worksheets that students will be using.

The lesson study team prepares the classroom so observers can circulate freely among students or stand comfortably around the periphery during whole-class instruction.

5. Teaching and observing the lesson.

On the day of the study lesson, all of the observers gather in one area in advance and everyone goes to the room together. The teacher probably will introduce the observers as a group before beginning the lesson.

Having observers in the room is what enables the team to learn so much about the lesson being taught. As Rochester facilitator Alice Gill said, "it's 14 pairs of eyes observing in the classroom and seeing what one teacher simply cannot pick up if she's the only one person in front of that classroom."

"A teacher could not possibly have walked around and written down the comments of all 25 students. But the other adults who were observing were writing down the conversations they overheard," said LaChapelle.

"Even though it's a study lesson, we're still managing the classroom. Someone has to go to the bathroom or somebody doesn't have a glue stick and the teacher has to handle that. But everyone else was free to just observe. They could really hone in on the conversation and what students were thinking and doing," Sundberg said.

6. Debriefing the lesson.

Rochester teacher Nancy Sundberg calls the debriefing "the meat of lesson study" because this is the time when the lesson study teams share their learning from the observation.

The entire lesson study team plus any additional observers gather following the lesson to begin the debriefing. Some groups may choose to continue the debriefing in later meetings as well. See Page 6 for a more detailed structure for the debriefing.

7. Reflect and plan the next steps.

Depending on what teachers learn in the debriefing, the team may decide to revise and re-teach the lesson. Calendar issues and other circumstances may make that difficult in some schools.

Lesson Study Cycle

1. Goal-setting and planning

- Select planning team.
- Identify goals for student learning and long-term development.
- Collaboratively plan instruction designed to bring these goals to life, including a "research" or "study" lesson that will be observed.

▼

2. Research or study lesson

- One planning team member teaches classroom lesson while other team members collect data on student thinking, learning, engagement, behavior, etc.

▼

3. Lesson debriefing

- Share and analyze data collected at research or study lesson.
- What is the evidence that goals for student learning and development were fostered?
- What improvements to the lesson and to instruction more generally should be considered?

▼

4. Consolidation of learning

- If desired, refine and re-teach the lesson and study it again.
- Write report that includes the lesson plan, student data, and reflections about what was learned.
- Share the lesson with all members of the team and other interested persons.

Preparing for observation of the study lesson

Assign observers key tasks.

• Are there particular students who should be observed?

• Do you want someone to keep time? Collect student work at the end of the lesson? Make notes on anything written on the blackboard? Record any disruptions that occur during the lesson?

### If you are going to videotape the lesson:

• Determine who will be the videographer.

• Determine where you will station the camera(s) to record both the teacher and students.

• Ensure that you secure permission slips from students in advance. (Familiarize yourself with your district's policy regarding videotaping of students.)

Prepare materials for observers.

• The lesson plan. Include the goal of the lesson, where the lesson fits in a unit, where the lesson fits across grades in the entire curriculum, how it relates to school goals, anticipated student responses, and progression of the lesson. Leave plenty of space so observers can record their notes.

• Copies of student work sheets.

• Seating chart including names of students and space to write notes.

Determine where observers will be stationed in the room as the teacher presents the lesson.

Arrange the classroom so observers can circulate around students as they work without disrupting their learning.
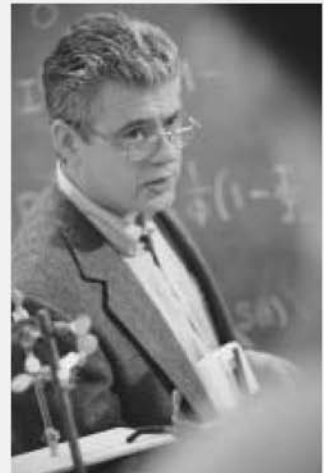
Observing the study lesson

Observers should take these actions while observing:

▶ Make notes on individual student comments and conversations, noting the names of students.

▶ Note situations in which students are collaborating or choosing not to collaborate.

▶ Look for examples of how students construct their understanding through their discussions and activities.

▶ Document the variety of methods that individual students use to solve problems, including errors.

Observers should consider these questions while observing:

1. Was the goal clear? Did the supporting activities contribute effectively to achieving the goal?
   ☐ Yes   ☐ No

2. Was the flow of the lesson coherent, and did it support students' learning of the concept?
   ☐ Yes   ☐ No

3. Were the problems and the materials helpful in achieving the goal of the lesson?
   ☐ Yes   ☐ No

4. Did the classroom discussions help promote student understanding?
   ☐ Yes   ☐ No

5. Was the content of the lesson appropriate for students' level of understanding?
   ☐ Yes   ☐ No

6. Did students apply their prior knowledge to understand the content of the lesson?
   ☐ Yes   ☐ No

7. Did the teacher's questions engage and facilitate student thinking?
   ☐ Yes   ☐ No

8. Were student ideas valued and incorporated into the lesson? Did the lesson summary refer to student theories or ideas?
   ☐ Yes   ☐ No

9. Was the lesson summary consistent with the lesson goal?
   ☐ Yes   ☐ No

10. How could the teacher reinforce what the students learned during the lesson?

_____

_____

_____

_____

Respect the natural atmosphere of the classroom

•   Minimize side conversations during the lesson.

•   Remain in the classroom during the entire lesson to capture how the lesson is set up, its flow, and its conclusion.

•   Do not block the students' view of the blackboard or any area where the teacher is writing and posting materials or demonstrating an activity.

•   Do not block the video camera.

•   Circulate freely when students are working individually or in groups but move to the side or back of the room during whole class discussions.

•   Minimize interactions with students. Refrain from teaching or assisting the students. Occasional interaction is permissible if done discreetly and with the purpose of understanding student thinking.

Source

"Guidelines for Lesson Study Observations and Debriefings," *RBS Currents*, Spring/Summer 2002 (Vol. 5, No. 2). Available online at www.rbs.org/currents/ 0502/guidelines.shtml

Debriefing the study lesson

Preparation

Even if you are doing some of the lesson study preparation in an online format, the initial debriefing should be done face-to-face on the same day as the observed lesson.

In advance of the debriefing, members of the group that designed the lesson should assign themselves the following roles: facilitator who keeps the conversation moving, a recorder who take notes and will provide a written summary of the debriefing, a time keeper, and a commentator.

Determine in advance how much time you will devote to the debriefing.

Members of the group that designed the lesson should arrange themselves at the front of the room in panel-style. This set-up emphasizes that it is the entire group and not just the teacher who taught the lesson who will be receiving the feedback from the observers.

Directions

1. Facilitator introduces everyone in the room and reminds participants of each person's role during the observation.

2. Facilitator reviews the agenda for the debriefing. *2 minutes.*

3. Facilitator briefly introduces the goals of the lesson study. *5 minutes.*

4. Facilitator describes the norms or expectations for how the group will provide feedback. There are three key norms for the debriefing:

    1) During this discussion, only one person speaks at a time.

    2) Everyone will be allowed an opportunity to speak.

    3) Observers should provide specific evidence for their observations and not merely offer opinions about the lesson.

5. The teacher who presented the lesson speaks first, commenting on his or her reactions to the lesson. The teacher should address what actually occurred during the lesson — what worked, what did not work, what could be changed. *15 to 20 minutes.*

6. Each planning group member speaks.

7. In a round-robin fashion, the facilitator calls upon observers to offer his or her feedback, ensuring that each person has an equal opportunity to share their observations.

8. The knowledgeable other summarizes the discussion.

9. The facilitator thanks the participants and ends the meeting with an announcement of the next step.

Maintain a respectful atmosphere

- Observers should begin their comments by identifying the positive aspects of the lesson.

- Ensure that the teacher who taught the lesson is not made to feel like he or she is being personally criticized.

- Do not focus on the success or failure of the lesson or on the teaching style.

- Select key, relevant observations. Avoid producing a "laundry list."

- Be an active participant. Try to contribute to the debriefing without repeating what has already been stated.

Sources

"Lesson Study Protocol" developed by the Lesson Study Research Group at Teachers College, Columbia University. The protocol is regularly updated. To see the latest version, please go to www.tc.columbia.edu/lessonstudy/tools.html.

"Guidelines for Lesson Study Observations and Debriefings," *RBS Currents*, Spring/Summer 2002 (Vol. 5, No. 2). Available online at www.rbs.org/currents/0502/guidelines.shtml

Resources for lesson study

"Everywhere I Looked — Levers and Pendulums"

Catherine Lewis, *Journal of Staff Development*, Summer 2002 (Vol. 23, No. 3).

Describes the process of lesson study in Japan and explores differences between U.S. and Japanese supports for such activity. Available online at www.nsdc.org/library/publications/jsd/lewis233.cfm

Lesson Study: A Handbook for Teacher-Led Instructional Change

Catherine Lewis. Philadelphia: Research for Better Schools, 2002.

This handbook illuminates both the key ideas underlying lesson study and the practical support needed to make it succeed in any subject area. Provides practical resources including schedules, data collection examples, protocols for lesson discussion and observation, and instructional plans for mathematics, science, and language arts. Includes contributions by U.S. lesson study pioneers Lynn Liptak, Tad Watanabe, and Makoto Yoshida. Order from Publications Department, Research for Better Schools, 112 N. Broad St., Philadelphia, PA 19102-1510, (215) 568-6150 or online at www.rbs.org.

Lesson Study group at Mills College
Lessonresearch.net

Catherine Lewis, one of the pioneers of using lesson study in the United States, is a professor at Mills College and uses this web site as a repository for information on the topic. The web site includes documents and lesson plans and access to videotapes and handouts for lesson study workshops. Science is the primary interest of this group.

"Lesson Study: Japanese Method Has Benefit for All Students"

Joan Richardson, *Results*, December/January 2001.

Describes Paterson (N.J.) School No. 2's experiences with lesson study and the potential for lesson study to work in U.S. schools. Available online at www.nsdc.org/library/publications/results/res12-00rich.cfm

Lesson Study Research Group web site
www.tc.edu/centers/lessonstudy

Clea Fernandez, a researcher at Teachers College, maintains this web site for sharing her work regarding lesson study. This site provides access to a listserv and discussion forum to connect educators who are using lesson study. Maintains a database of schools and districts across the United States that have worked with lesson study.

Research for Better Schools web site
www.rbs.org/lesson_study/

Contains extensive background information on developing lesson studies and links to numerous citations for lesson study. Includes a page on Frequently Asked Questions about Lesson Study and the Spring/Summer 2002 issue of *RBS Currents* newsletter on lesson study which is available at www.rbs.org/currents/0502/index.shtml.

Ask Dr. Developer

Dr. Developer has
all the answers to
questions that staff
developers ask.

(At least he thinks
he does!)

Going online for lesson study

Q *There are not enough interested teachers in my school to do lesson study effectively. I'm intrigued by the possibility of doing a lesson study online. What's the best way to structure that?*

A Doing lesson study online may not be as easy as face-to-face work but it offers a great deal of potential for motivated educators.

The Rochester, N.Y., group referenced in the main article in this issue worked together for two years and had only a handful of face-to-face meetings. Most group members had participated in a summer Thinking Math institute together. But the "knowledgeable other" who joined the group did not meet the others until the observation lesson.

The Rochester facilitator was Alice Gill, associate director for educational issues at the American Federation of Teachers.

Gill said the optimal number of participants for an online discussion is probably 10 to 12, including the facilitator and the "knowledgeable other."

Using a listserv, Gill sent questions to the group and set deadlines for each response to keep the discussion moving along.

As with any meeting, the facilitator must be sensitive to the group's needs to keep the conversation going or to pause and assess the group's discussion. Gill said she periodically paused the conversation and assembled ideas into documents that could be shared with all participants. That also made it possible to check that all participants shared the same understanding of the work to that point.

As the lesson plan is created, documents generated by the group can either be posted on a web site or sent to all participants as attachments.

If you decide to pursue an online lesson study, Gill recommends that the group meets face-to-face after the observed lesson. This should work out well since all of the participants will be together to observe the lesson anyway.

After the final debriefing, Gill recommends posting the group's final report on a web site. This provides ready access for group members as well as enabling other educators to view the work.

3 **TEACHERS TEACHING TEACHERS**   PAGE 4

Bill Jackson, left to right, meets with Ronna Bachman, Heather Crawford, Sunjoo Kim and Joe Adriulli.

Lesson study invigorates math coach — and his school

BY JOAN RICHARDSON

Eight years ago, curiosity changed the course of Bill Jackson's professional life.

The classroom teacher became transfixed by the Japanese process of lesson study, eventually becoming the facilitator for the process in his home school and one of the most notable proponents for lesson study in the U.S. Much of his value as an advocate for lesson study comes from his ongoing, on-the-ground experience as a teacher who coaches other teachers in the process in his school, Paterson School No. 2 in Paterson, N.J.

"The point of lesson study is not to teach one great lesson. It's to transfer all of what you've learned about teaching into all of your teaching," Jackson said.

"Lesson study shows me how I can help other teachers in a more powerful way. It reduces the isolation of teachers and fosters collaboration

between teachers. It provides a common understanding of teaching practice and promotes a consistency of teaching throughout a building. It shows a teacher how to become a high-quality teacher over time," he said.

Jackson's journey into lesson study and teacher leadership began in 1997 when he was a classroom teacher at School 2 and accepted an invitation to join a math study group started by the school's then-principal Lynn Liptak.

The math study group attended workshops on the TIMSS videotapes of math classrooms and Jackson was intrigued by the Japanese style of teaching which he thought was more powerful than his own instruction. Working from what he had observed in the videotapes, Jackson tried to imitate what he saw happening in those classrooms, not really understanding the process that the Japanese teachers had gone through to create the lessons he observed.

Soon, the math study group learned about lesson study, the intensive professional development process that Japanese teachers use to improve classroom lessons. Through researchers at Columbia University's Teachers College in New York City, School 2 teachers were able to connect with teachers from Greenwich (Conn.) Japanese School, a relationship that continues to this day.

Jackson greatly values the relationship with the Greenwich teachers. "That's the best professional development for me. Working with them is how I stay sharp," he said.

When the work with Greenwich began, Jackson was one of 16 teachers who volunteered to spend some time every week developing and refining math lessons. "I was one of the very enthusiastic lesson study participants. When teachers were afraid to teach publicly, I volunteered. I was never shy about that," he said.

By the 1999-2000 school year, the principal had seen enough to convince her to carve out time to enable the volunteer teachers to meet from 1 p.m. to 3 p.m. every Monday in lesson study groups. Two years later, all teachers were expected to participate in lesson study groups 80 minutes each week. Jackson became math facilitator with his primary work to guide the lesson study groups.

Jackson continues as the school's math facilitator but, because of a districtwide change in school schedules, School 2's principal was unable to provide time during the workday for teachers to participate in lesson study. A small group of volunteer teachers is continuing the process after school.

Until this year, School 2's goal had been to develop at least one research lesson per year per grade. Teachers worked in grade-level math groups and selected lessons that they'd had difficulty with in the past or which they knew had caused students to struggle. Eventually, one of the teachers volunteered to teach the lesson to students with other teachers observing. The observers followed a precise protocol. Teachers gathered after the lesson to debrief what they had observed. Then, the same teachers refined the lesson. The lesson was re-taught, using the refined lesson. After teaching the lesson a second time, teachers once again met to discuss it. Finally, they wrote a report on what was learned during that lesson study cycle. Teachers presented these reports with PowerPoint at staff meetings. The reports with lesson plans, discussion notes, conclusions and recommendations along with videotapes of the lessons are stored in the library.

In addition to facilitating the lesson study groups, Jackson also provides intensive support for teachers. Rather than observing an occasional lesson here or three, he observes every math lesson taught by one teacher during the school's 90-minute math block over a one- or two-week period. "They teach. I observe. We talk," he said in describing the process.

That process, he said, is ideal because teachers are not teaching special lessons but allowing him to observe their everyday practice. This also allows him to have frequent short but timely debriefings.

In addition, Jackson teaches model lessons while other teachers observe. That also is followed by a debriefing about the strengths and weaknesses of his lesson.

Changes in School 2 and the district have presented Jackson with new challenges this year. Teachers are no longer required to participate in lesson study and teachers who are interested in

**Benefits
of lesson study**

→ It shows me how I can help other teachers in a more powerful way.

→ It reduces the isolation of teachers and fosters collaboration between teachers.

→ It provides a common understanding of teaching practice and promotes a consistency of teaching throughout a building.

→ It shows a teacher how to become a high-quality teacher over time.

— *Bill Jackson*

3) TEACHERS TEACHING TEACHERS   PAGE 6

WILLIAM JACKSON

Position: Mathematics facilitator/teacher, Paterson School No. 2

School district: Paterson (New Jersey) Public Schools

Professional history: Before becoming math facilitator at School 2, Jackson had been a classroom teacher for 17 years, teaching grades 3 through 8 as well as bilingual education and adult ESL classes. At School 2, he has been the lead teacher in the school's lesson study work. He has managed the school's lesson study relationship with the Greenwich (Conn.) Japanese School. He also has

co-authored the math curriculum for grades 7 and 8 at his school, based on the findings of the TIMSS study and what Paterson teachers learned about student learning through their work with lesson study.

Education: Earned his bachelor's degree in economics from Rutgers University, 1982 and a master's degree in education with a concentration in bilingual/bicultural education, William Paterson University, Wayne, N.J., in 1997.

Honors/accomplishments: Awarded Fulbright Memorial Scholarship by the government of Japan to study the Japanese educational system

in Tokyo and Ibaraki Prefecture, Japan, 1999. Member of select group of educators to represent the United States at U.S./Japan Mathematics Seminar in Park City, Utah, July 2002.

Professional service: Jackson is an active participant in the lesson study work in the United States. He presents frequently at mathematics conferences regarding lesson study and is a regular participant in the lesson study conference hosted by Greenwich (Conn.) Japanese School.

To continue this conversation, e-mail Jackson at wcjack@optonline.net.

POWERFUL DESIGNS

Lesson study **is one of the 21 strategies featured in *Powerful Designs for Professional Learning*. Buy it at store.nsdc.org**

the process must join a voluntary after-school group led by Jackson, who's also volunteering his time. He believes that lesson study made a profound impact on the culture of the school and was beginning to impact student achievement.

"Conversations have changed. It's real common for teachers to say, 'come look at my blackboard. I want you to see my students' work.' It literally has transformed the feeling in this building," Jackson said.

"At my school, teachers don't have to know everything. We know that we can learn to be good teachers. But, first, we have to let our guard down," he said.

But he worries that these improvements will fade if administrators don't make their support more tangible. "It's very easy to slip back into the same old same old. That's what I'm struggling with right now. Without support, you're a Lone Ranger," he said.

"You need administrators who let the staff know that this is part of the professional lives of

teachers in this school. There was a time when lesson study was 'the way we do business' in this school," he said.

Jackson also worries that the American tendency to favor a quick fix is out of step with a learning process as intensive as lesson study.

"Americans have little patience for anything that doesn't produce immediate results. Lesson study produces slow but steady improvement over time," Jackson said. School 2 made AYP in 3rd and 4th grade but "the test scores didn't jump through the roof."

Without commitment from the district, he wonders how long he'll be able to share his passion for lesson study with other teachers at his school.

"If you're not getting support from the top, I don't see how this can work long-term. You hear a lot about lesson study being teacher-driven. I'm not sure that's true. It's teacher-driven if teachers are allowed to drive it," he said. ◆

> **"Americans have little patience for anything that doesn't produce immediate results. Lesson study produces slow but steady improvement over time."**

To learn more about lesson study, see the Lesson Study topic in the NSDC Online Library, www.nsdc.org/ library/strategies/ lessonstudy.cfm

Tools For Schools

A bi-monthly publication supporting student and staff learning through school improvement

Select the strategy that works

PROCESS

for your context and content

BY LOIS BROWN EASTON

Imagine a school that has an environment of staff growth and learning. The climate that makes learning possible for adults in this school can always improve, but the school can legitimately call itself a professional learning community. This school has the *context* for adult learning.

Imagine that this school has collected and analyzed data from a variety of sources. Staff members know what they need to learn to do better so students can learn better. Teachers know the *content* they must study.

What they need to know is how: How will they learn what they need? What strategies will help them learn and help them make changes that affect student achievement? What *processes* will they initiate?

Selecting the right process (or strategy or design) is an important consideration for those developing and participating in professional learn-

ing that will make a difference. In fact, it is so important that the National Staff Development Council made it one of three aspects designers of professional development must consider, along with context and content (NSDC, 2001).

Imagine that the staff at our imaginary school has determined that students need to improve their reading skills in the content areas. The staff wants to learn how to help students understand materials they read in social studies and science, for example. Rather than have administrators decide how they should learn, staff members consult a resource that describes powerful strategies for professional development — such as NSDC's newest book, *Powerful Designs for Professional Learning* (NSDC, 2004) — and select a variety of processes that could be used. Some of these designs work individually. Some work individually and then suggest that individuals get together in groups. Some work best

Select the strategy that works

in groups. Six months into their focus on reading in the content areas, teachers come together, bringing a variety of viewpoints after experiencing a variety of professional development activities — though all focused on reading. Their professional development continues with other processes as they implement the changes they have identified.

Let's be more specific. In the first six months, one teacher decides to **access student voices** by having students talk about reading in focus groups. Other teachers begin **action research** projects, mostly working alone but getting together every other week to share their results. A few individuals keep **journals** about reading in their own classrooms. Some of these individuals create **portfolios** to share with others. Another group conducts **case discussions** on reading, and another looks at curriculum as **curriculum designers**. The principal and associate principals do **classroom walk-throughs** that focus on reading. Another group **analyzes the data** that initiated this professional learning cycle; this group wants to know the details behind the scores that alarmed the staff about reading in the content areas. The last group examines classroom and district **assessments** for levels of questioning about text.

At the end of the first six months, these individuals and groups learn from each through **visual dialogue**, and the staff as a whole creates a plan for action. The action research individuals and groups continue their work, as do the journal writers and portfolio makers. The curriculum designers and the assessment group expand their work, and other groups begin to form. Some staff members begin to meet in **critical friends groups** and do **tuning protocols** around student understanding of text. A small group decides to **shadow students** in another school, known for its focus on critical reading skills.

Later, as implementation continues (and gets tougher), a group forms to do

21 strategies

The 21 strategies included in *Powerful Designs for Professional Learning:*
- Accessing student voices
- Action research
- Assessment as professional development
- Case discussions
- Classroom walk-throughs
- Critical friends groups
- Curriculum design
- Data analysis
- Immersing teachers in practice
- Journaling
- Lesson study
- Mentoring
- Peer coaching
- Porfolios for educators
- School coaching
- Shadowing students
- Standards in practice
- Study groups
- Training the trainer
- Tuning protocols
- Visual dialogue

lesson study related to reading in science classes. Another group looks at assignments through the **standards in practice** process. Finally, the staff decides to have a **school coach** help them focus on literacy across the curriculum.

This article and the charts on Pages 3-6 will guide you in choosing the designs that will work for your school.

WHO?

All of the 21 professional development designs included in *Powerful Designs for Professional Learning* work well with classroom teachers as well as administrators at the building and district levels. The Page 3 chart identifies designs that will benefit by including college or university staff or community members, par-

ents, and policy makers as partners.

Regardless of who is involved in professional development, always ask, "Who else needs to be here?"

1. Who should be involved?
2. Will people work as individuals or in groups?

WHAT AND WHY?

Each of the 21 designs has roots in what happens in classrooms, focuses on learners and learning, and is collaborative in some way. All designs honor professionals. All lead to application. All promote inquiry and reflection.

Beyond these standards for powerful professional development, however, are other more specific purposes that can be promoted through certain designs. These more specific purposes take the form of questions listed below. Designs that are especially oriented to these specialized purposes are listed in the charts on Pages 4 and 5.

1. Which designs are most useful for gathering and using information from within the school or district about learning?
2. Which designs are most likely to use outside resources to inform the work?
3. Which designs are especially useful in creating a learning community?
4. Which designs focus most on standards, curriculum, and assessment?
5. Which designs focus most on practice or pedagogy?
6. Which designs are most useful for looking at classrooms?
7. Which designs focus on the whole school and/or beyond?
8. Which designs are particularly reflective?
9. Which designs look at student work or involve students in some way?
10. Which designs are best for bringing others (other than teachers or administrators) into the school improvement effort?

POWERFUL DESIGNS: WHO AND WHEN

POWERFUL DESIGN	WHO? In addition to classroom teachers and administrators, who should be involved?					WHEN? (Assumes no less than 1-year commitment)						
						Frequency				Duration		
	University or college staff	Community, parents, policy makers	Individuals at first, then groups	Pairs	Large groups/ concurrent small groups	3 to 6 times a year	At least monthly	At least weekly	Daily	Each session is 3 hours or more	Each session is 1 to 2 hours	Each session is an hour or less
Accessing Student Voices			X			X				X		
Action Research	X		X				X*	X**			X*	X**
Assessment as Professional Development					X	X				X		
Case Discussions					X		X				X	
Classroom Walk-Throughs			X						X			X
Critical Friends Groups	X				X		X				X	
Curriculum Designers	X				X	X				X		
Data Analysis	X	X			X	X				X		
Immersing Teachers in Practice					X		X				X	
Journaling			X						X			X
Lesson Study					X	X				X		
Mentoring	X			X				X			X	
Peer Coaching	X			X				X			X	
Portfolios for Educators			X					X				X
School Coaching	X	X			X		X				X	
Shadowing Students		X	X			X				X		
Standards in Practice					X		X				X	
Study Groups	X	X			X	X				X		
Training the Trainer	X			X			X				X	
Tuning Protocols	X				X		X				X	
Visual Dialogue					X	X				X		

* = group sharing   ** = individual work

Source: *Powerful Designs for Professional Learning*, by Lois Brown Easton. Oxford, OH: National Staff Development Council, 2004. All rights reserved. Order through NSDC's Online Bookstore, store.nsdc.org.

POWERFUL DESIGNS: WHAT AND WHY

POWERFUL DESIGN	Useful for gathering data in a school	Involves gathering information from external sources	Particularly helpful in creating a learning community	Looks at standards, curriculum, assessment	Focuses on pedagogy and teaching	Involves looking at classrooms	Involves looking at whole school/ beyond
Accessing Student Voices	X						X
Action Research	X	X		X	X	X	X
Assessment as Professional Development		X		X			
Case Discussions		X		X	X		
Classroom Walk-Throughs	X					X	
Critical Friends Groups			X		X		
Curriculum Designers		X		X			X
Data Analysis	X						
Immersing Teachers in Practice				X	X		X
Journaling					X		
Lesson Study		X		X	X	X	X
Mentoring		X	X		X	X	
Peer Coaching		X	X		X	X	
Portfolios for Educators	X				X	X	
School Coaching		X					X
Shadowing Students	X	X				X	
Standards in Practice				X			
Study Groups		X		X			X
Training the Trainer							X
Tuning Protocols			X		X	X	
Visual Dialogue	X	X	X	X			X

POWERFUL DESIGNS: WHAT AND WHY

POWERFUL DESIGN	Is particularly reflective	Involves looking at student work or students	Good for involving others	Good for problem solving	Results in a concrete product	Is experiential	Involves modeling
Accessing Student Voices		X	X	X			
Action Research		X		X			
Assessment as Professional Development					X		
Case Discussions							
Classroom Walk-Throughs				X		X	
Critical Friends Groups		X		X			
Curriculum Designers					X		
Data Analysis				X			
Immersing Teachers in Practice						X	X
Journaling	X					X	
Lesson Study				X	X	X	X
Mentoring	X	X	X	X		X	X
Peer Coaching	X	X		X		X	X
Portfolios for Educators	X	X		X	X		
School Coaching			X	X			
Shadowing Students		X	X			X	
Standards in Practice		X		X	X	X	X
Study Groups				X			
Training the Trainer	X		X		X	X	
Tuning Protocols		X					
Visual Dialogue			X	X		X	

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POWERFUL DESIGNS: HOW

POWERFUL DESIGN	Facilitator needed?			Administrator involvement?			School in/out?		Cost?*
	No	At first	Yes	Support	Participation essential	Participation helpful	In	Out	
Accessing Student Voices			X	X			X		$
Action Research	X			X		X	X		$$
Assessment as Professional Development			X	X	X		X	X	$$$
Case Discussions			X	X		X		X	$$
Classroom Walk-Throughs	X			X	X		X		$
Critical Friends Groups		X		X		X	X		$$
Curriculum Designers			X	X	X			X	$$$
Data Analysis			X	X	X			X	$$$
Immersing Teachers in Practice			X	X		X	X	X	$$$
Journaling	X			X	X		X		$
Lesson Study			X	X		X	X	X	$$
Mentoring	X			X	X		X		$$
Peer Coaching	X			X	X		X		$$
Portfolios for Educators	X			X	X		X		$
School Coaching			X	X	X		X		$$$
Shadowing Students			X	X	X		X		$$
Standards in Practice			X	X		X	X		$$
Study Groups		X		X	X		X		$$
Training the Trainer			X	X		X	X	X	$$$
Tuning Protocols		X	X	X		X	X		$$
Visual Dialogue			X	X	X		X		$$$

* $ = low cost $$ = medium cost $$$ = high cost

Select the strategy that works

11. Which designs can be used to address specific problems and seek solutions?

12. Which designs result in a concrete product? Which designs are the most experiential?

13. Which designs may involve modeling?

WHEN?

To be effective, schools should plan to commit to a design for at least a year. No design should be implemented only once a year. They are meant to be continuous over a period of time.

See the chart on Page 3 for guidance in designs that will work well in three to six sessions a year, those that require at least monthly meetings, those that should occur at least weekly, and those that should happen daily.

In addition, the duration of any professional development activity or session can vary enormously. Some strategies that may require less frequent meetings may need three hours or more for each session. Some strategies may require educators to meet together more often but for shorter amounts of time. Individual work that results in later group sharing might require an hour or less.

HOW?

All 21 designs identified in this article can be used with other designs to explore the same content. In fact, using a variety of adult learning strategies oriented towards the same need can enrich the results considerably.

The chart on Page 6 will help you identify strategies by answering the following questions:

1. Which designs require a facilitator?

2. Which designs require administrators to be involved?

3. Which designs work best when school is in session? Which designs work

What are NSDC's process standards?

In terms of process, the NSDC Standards for Staff Development agree that staff development that improves the learning of all students:

■   Uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement. *(Data-driven)*

■   Uses multiple sources of information to guide improvement and demonstrate its impact. *(Evaluation)*

■   Prepares educators to apply research to decision making. *(Research-based)*

■   Uses learning strategies appropriate to the intended goal. *(Design)*

■   Applies knowledge about human learning and change. *(Learning)*

■   Provides educators with the knowledge and skills to collaborate. *(Collaboration)*

best when school is not in session?

4. Which designs cost the most?

Students will succeed when educators choose the best possible context for professional development, deliberately focus content on student improvement needs, and choose processes that help teachers learn to best address those needs.

> **Adapted from** *Powerful Designs for Professional Learning*, **edited by Lois Brown Easton. Oxford, OH: National Staff Development Council, 2004. All rights reserved. See Page 8 for ordering information.**