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## Content-Focused Coaching: Transforming Mathematics Lessons

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### DESCRIPTION

*Content-Focused Coaching: Transforming Mathematics Lessons*, by Lucy West and Fritz C. Staub, describes a professional learning model designed to engage specialists in the role of coaching and teachers in thoughtful dialogues resulting in improved teaching and learning. The model of content-focused coaching provides a collaborative means for specialists and teachers to plan, teach, and reflect upon classroom lessons. Specialists provide individualized, adaptive, and situation-specific professional learning focused on content, pedagogy, and student learning. The authors believe teaching is a learnable craft, and the model described provides the support teachers need to improve their craft. The book describes the general tenets of content-focused coaching and provides examples of the model in both elementary and middle schools. Accompanying CDs and transcripts of coaching conversations provide opportunities to see coaching as well as constructivist mathematics teaching in action. The book is organized into ten chapters:



- Chapter 1 describes the general model and the underlying principles.
- Chapter 2 outlines the structure of coaching sessions and provides advice on getting started.
- Chapters 3-7 include three case studies that parallel the videos along with information on using these resources.
- Chapter 8 and 9 provide practical advice for principals and districts working with specialists.
- Chapter 10 describes the transition from teacher to specialist.

### STAGE 1 LEADERSHIP DEVELOPMENT

*Content-Focused Coaching: Transforming Mathematics Lessons*, by Lucy West and Fritz C. Staub, supports stage 1 development of specialists working to develop knowledge of the skill of coaching and modeling effective coaching. A specialist will find the book useful for describing the professional development model known as content-focused coaching that has a specialist and teacher working together to refine how the teacher teaches particular lessons to a specific group of students. The process includes:

- The Pre-Lesson Conference where the teacher explains the goals for the lesson and the plan for teaching the lesson. The specialist and teacher talk about how the lesson will foster student learning and how curriculum materials can be a starting place for designing or redesigning a particular lesson.

- The Lesson where the specialist’s role in the class can vary considerably. The teacher and specialist collaborate to plan the specialist’s role that may change from observing only to co-teaching or modeling the lesson.
- The Post-lesson Conference where the teacher and specialist talk about how the lesson went including the successes and problems that arose. Together, the specialist and teacher evaluate whether or not the students learned what was expected.

## STAGE 2 LEADERSHIP DEVELOPMENT

*Content-Focused Coaching: Transforming Mathematics Lessons*, by Lucy West and Fritz C. Staub, supports stage 2 development of leaders working to ensure implementation of best-practice instruction. The guided practice teachers need to learn can be facilitated with a mathematics specialist through content-focused coaching. Effective specialists must have deep content knowledge along with the ability to show teachers how to set goals, choose powerful tasks, anticipate student responses, and plan instructional conversations. Study groups will find the videos of the coaching sessions and lessons described in the case studies, along with the transcripts and commentary contained in the chapters, a valuable tool for learning the skills of coaching. Chapter 4, “Using the CDs,” describes a process useful for working together to reflect on the practice of coaching. For those wanting an in depth study of content-focused coaching, allowing more than one session for each case or CD is advised. The case studies show all three parts of a complete coaching session: pre-conference, lesson, and post- conference.

The three case studies provide a look at different stages of coaching:

- Chapter 5 shows a new teacher and a first coaching session.
- Chapter 6 shows a fifth coaching session with an experienced teacher.
- Chapter 7 shows a specialist and teacher that have worked together extensively for over a year.

For each case study, the recommended process for study and reflection includes the steps described below:

- First, do the mathematics. Consider the “What” of the lesson as you read and work through the task given in the book. A group working together may benefit from expanding on the problem and discussing the connections and trajectory of learning they associate with the task.
- Next, consider the “How” of the lesson as you use the Guide to Core Issues in Mathematics Lesson Design below to discuss the implementation of the lesson. In the book, have participants read the information on the school, the teacher, the class, and the lesson to gain background. Then have partners or small groups discuss and create a rough outline of how the lesson might be designed.

## FIGURE 1-3: GUIDE TO CORE ISSUES IN MATHEMATICS LESSON DESIGN

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### What are the goals and the overall plan of the lesson?

- ❖ What is your plan?
- ❖ Where in your plan would you like some assistance?

(Based on the teacher's response, the coach focuses on one or more of the following ideas.)

### What is the mathematics in this lesson? (i.e., make the lesson goals explicit)

- ❖ What is the specific mathematics goal of this lesson?
- ❖ What are the mathematics concepts?
- ❖ Are there specific strategies being developed? Explain.
- ❖ What skills (applications, practice) are being taught in this lesson?
- ❖ What tools are needed (e.g., calculators, rulers, protractors, pattern blocks, cubes)?

### Where does this lesson fall in this unit and why? (i.e., clarify the relationship between the lesson, the curriculum, and the standards)

- ❖ Do any of these concepts and/or skills get addressed at other points in the unit?
- ❖ Which goal is your priority for this lesson?
- ❖ What does this lesson have to do with the concept you have identified as your primary goal?
- ❖ Which standards does this particular lesson address?

### What are students' prior knowledge and difficulties?

- ❖ What relevant concepts have already been explored with this class?
- ❖ What strategies does this lesson build on?
- ❖ What relevant contexts (money, for example) could you draw on in relation to this concept?
- ❖ What can you identify or predict students may find difficult or confusing or have misconceptions about?
- ❖ What ideas might students begin to express and what language might they use?

### How does the lesson help students reach the goals? (i.e., think through the implementation of the lesson)

- ❖ What grouping structure will you use and why?
- ❖ What opening question do you have in mind?
- ❖ How do you plan to present the tasks or problems?
- ❖ What model, manipulative, or visual will you use?
- ❖ What activities will move students toward the stated goals?
- ❖ In what ways will students make their mathematical thinking and understanding public?
- ❖ What will the students say or do that will demonstrate their learning?
- ❖ How will you ensure that students are talking with and listening to one another about important mathematics in an atmosphere of mutual respect?
- ❖ How will you ensure that the ideas being grappled with will be highlighted and clarified?
- ❖ How do you plan to assist those students who you predict will have difficulties?
- ❖ What extensions or challenges will you provide for students who are ready for them?
- ❖ How much time do you predict will be needed for each part of the lesson?

- Now use a printed copy of the transcript along with the CD to watch and reflect on the pre-conference. Before viewing the pre-conference, refer again to the Guide to Core Issues in Mathematics Lesson Design (West) using it to focus your viewing. Each person in the group might focus on a different section of the guide and listen for and note on the transcript evidence of the section. This process will help coaches to begin to develop a sense of the nature of the coaching dialogue as well as a familiarity with the guide. After watching the CD have participants read the information from the book describing the history of the coaching relationship and the pre-conference.
- Before viewing the video of the lesson, discuss what things you might notice during a mathematics lesson. Make a list for the group and have each participant choose one area. For example, one participant may focus on questioning and another on teacher use of visuals. Once each person has chosen a focus, watch the lesson in segments. After each segment, pause and have participants underline the parts in the transcript that relate to their focus. Partners may then share the evidence they found and reflect on questions they may have about what they have observed. Conclude by having participants read the information in the book on the Lesson.
- Before viewing the video of the post conference, pose the question “What issues might be raised with this teacher?” Have participants individually refer again to the Guide to Core Issues in Mathematics Lesson Design (West) and mark the questions that relate to the issues they would raise. After discussing the issues watch the video of the post-conference and note on the transcript evidence of issues raised. After watching the video and also reading the section from the book on the post-conference, discuss what the teacher may have learned in the coaching process about teaching and learning in general.
- The section on Studying Coaching Moves in chapter 4 provides additional information on using the video segments a second time to gather and discuss evidence of specific coaching moves. In general, the two types of coaching moves include inviting the teacher to verbalize perceptions and providing direct assistance.