



Ministry of Education – The Literacy and Numeracy Secretariat

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Events for Classrooms

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WEBCAST

FACILITATION GUIDE – PART A

*Understanding The Key Ideas About
Knowing Mathematics For Teaching*

for the November 2005 Webcast
Knowing Mathematics for Teaching
with Dr. Deborah Loewenberg Ball



Dr. Deborah Loewenberg Ball, Interim Dean of the School of Education and William H. Payne Collegiate Professor at the University of Michigan will speak about mathematics education. She is an experienced elementary classroom teacher, who has spent many years researching the relationship between math instruction and content knowledge. She has received numerous awards for her involvement in research and teacher education.

To view more about Dr. Deborah Loewenberg Ball, see her website:
www.personal.umich.edu/~dball/

FACILITATION GUIDE – PART A

Understanding The Key Ideas About Knowing Mathematics For Teaching

This webcast with Dr. Deborah Loewenberg Ball is a rich resource for professional learning in mathematics instruction. Because the webcast includes a wealth of ideas, strategies, and details, we suggest that your first viewing focus on understanding the key ideas about “knowing mathematics for teaching.” To facilitate your viewing of and professional learning from this webcast, some processing and recording tools are provided. These tools are based on ideas and strategies from the *Think Literacy: Cross-Curricular Approaches, Grades 7-12* (MOE, 2004).

Anticipation Guide

This *Anticipation Guide* is a series of questions or statements related to the topic or point of view from a text, like this webcast. This guide will help webcast viewers to activate their prior knowledge and experiences, as well as think about the ideas presented throughout the webcast. Further, an *Anticipation Guide* raises the viewer’s awareness of the relationships between ideas and key details presented throughout the webcast, and it helps viewers to make connections with what is familiar and unfamiliar.

Use this *Anticipation Guide* if you are recording your own thinking during the webcast.

ANTICIPATION GUIDE
Webcast with Deborah Loewenberg Ball - Knowing Mathematics for Teaching

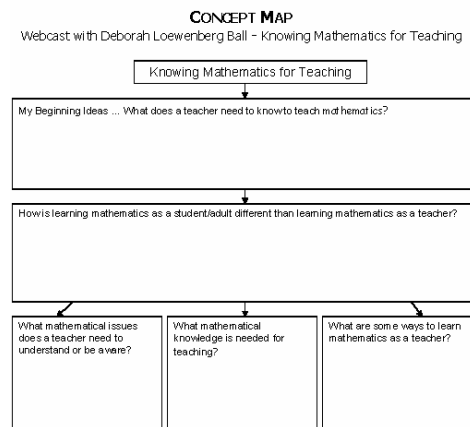
- Circle "Agree" or "Disagree" below each statement below BEFORE you view the webcast.
- Mark the webcast. Record any points that are common to the topic below.
- AFTER you have viewed the webcast, consider the statements below again, based on any new information you may have gathered. Circle "Agree" or "Disagree" below each statement and check to see whether your opinion has changed from or the webcast.

Before Viewing	Substantive	After Viewing
1. I agree/disagree	Knowing mathematics for teaching is about knowing how to solve mathematics.	Agree/Disagree
2. I agree/disagree	Knowing how many multiplication strategies for mathematics are is one of mathematics work.	Agree/Disagree
3. I agree/disagree	We will depend on our mathematics for teaching to teach mathematics to other people to teach.	Agree/Disagree
4. I agree/disagree	Teaching mathematics is a thinking process that requires reasoning and learning with pedagogical value.	Agree/Disagree

Concept Map

This *Concept Map* is a tool to visually organize a viewer’s processing of information during a webcast. It is hierarchical in nature, beginning with the webcast topic at the top of the page, and then branching into subtopics and details. Its purpose is to record particular ideas and details while viewing the webcast. Also, a *Concept Map* helps viewers to see relationship among ideas, and distinguish between main ideas and supporting details. As a recording device, it will help the viewer to remember important details and organize information in a memorable and accessible way for use after the webcast.

Use this *Concept Map* if you are recording your own thinking during the webcast.



Place Mat

This *Place Mat* enables viewers to take notes as they are watching the webcast. Draw out the Place Mat on chart paper and provide each webcast viewer with a marker for recording. During the webcast, each viewer should record their ideas and observations in their own space on the Place Mat. After the webcast, viewers take turns sharing their observations and ideas. As a group, write ideas that are common in the centre of the chart paper.

Use this *Place Mat* to record your own thinking during the webcast and to compare your thinking with colleagues after the webcast.

PLACE MAT
Webcast with Deborah Loewenberg Ball - Knowing Mathematics for Teaching

	Common Ideas	

ANTICIPATION GUIDE

Webcast with Deborah Loewenberg Ball - Knowing Mathematics for Teaching

- Circle “Agree” or “Disagree” beside each statement below BEFORE you view the webcast.
- View the webcast. Record any details about the comments in the spaces below.
- AFTER you have viewed the webcast, consider the statements below again, based on any new information you may have gathered. Circle “Agree” or “Disagree” beside each statement and check to see whether your opinion has changed based on the new evidence.

Before Viewing	Statements	After Viewing
1. Agree/Disagree	Knowing mathematics for teaching is about knowing how to do the mathematics.	Agree/Disagree
2. Agree/Disagree	Knowing how many manipulatives are needed for students to use is a form of mathematics work.	Agree/Disagree
3. Agree/Disagree	We will improve student achievement in mathematics if we recruit mathematically-trained (university math qualifications) people into teaching.	Agree/Disagree
4. Agree/Disagree	Teaching mathematics is a thinking practice that integrates reasoning and knowing with pedagogical action.	Agree/Disagree
5. Agree/Disagree	It is important that teachers try develop a solution to each problem that they present to students, prior to the lesson.	Agree/Disagree
6. Agree/Disagree	Collaboration and teacher inquiry are effective processes for improving mathematics instruction and student achievement in mathematics.	Agree/Disagree

CONCEPT MAP

Webcast with Deborah Loewenberg Ball - Knowing Mathematics for Teaching

Knowing Mathematics for Teaching

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graph TD; A[Knowing Mathematics for Teaching] --> B[My Beginning Ideas ... What does a teacher need to know to teach mathematics?]; B --> C[How is learning mathematics as a student/adult different than learning mathematics as a teacher?]; C --> D[What mathematical issues does a teacher need to understand or be aware of?]; C --> E[What mathematical knowledge is needed for teaching?]; C --> F[What are some ways to learn mathematics as a teacher?];
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My Beginning Ideas ... What does a teacher need to know to teach mathematics?

How is learning mathematics as a student/adult different than learning mathematics as a teacher?

What mathematical issues does a teacher need to understand or be aware of?

What mathematical knowledge is needed for teaching?

What are some ways to learn mathematics as a teacher?

PLACE MAT

Webcast with Deborah Loewenberg Ball - Knowing Mathematics for Teaching

	Common Ideas	