



Connecting Practice and Research
in Mathematics Education

Professional Learning Guide

Questioning

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Knowing how and what questions to ask students is an important strategy. Paying close attention to the questions you ask, the purpose for the questions, and student answers can help you not only ‘to teach better mathematics, but to teach mathematics better’.

Using questions effectively through class teaching and learning helps facilitate participation and stimulate higher levels of thought.

In your classroom, this means using:

- appropriate questions at the beginning, during, and at the end of a class;
- a balance of higher-level thinking questions that require reflective thought by students, and lower-level thinking requiring factual knowledge;
- open-ended questioning, which may create disequilibrium and informal classroom discussions regarding mathematical thinking and processes;
- questions to help engage the students in classroom learning.

Considerations

Some strategies to help implement more effective questioning into your lessons are:

- never say anything a student can say;
- ask good questions that are open-ended, not just recalling a fact or a skill;
- use more process questions requiring students to reflect, analyse, explain, avoid yes/no or memory driven responses;
- replace lectures with well thought out questions;
- provide “wait time” for students to think before expecting a response.

(Reinhart, 2000)

Questioning is a developed skill which, when effectively implemented, can enrich the classroom environment and improve the learning of your students. Good questioning is best used with a combination of other teaching strategies.

For more information, go to:

<http://www.edu.gov.on.ca/eng/studentsuccess/lms/files/tips4rm/TIPS4RMDDevMathLit.pdf>

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My Personal Reflection and Plan

I plan the key questions for my mathematics lesson

occasionally

fairly often

at every opportunity

What are two reasons that I don't plan the key questions for my lesson, at every opportunity?

In your class, what is the balance between fact, skill, and recalling knowledge questions versus open-ended, reflecting, analysing, and explaining questions:

75%–25%

50%–50%

25%–75%

How can I learn more about improving my questioning?

Other ideas and thoughts I have after hearing the comments of my peers:

Next Steps

Lesson from TIPS4RM that I will teach to focus on improving my questioning:

Lesson Goal:

I will pose these questions

Part of Lesson	Question I Will Ask
<ul style="list-style-type: none">•••	

How will the students benefit?

Other notes:

Lesson Debrief

I noted the following benefits from planning the key questions for my lesson:

Evidence that changes in questioning benefited my students:

How effective were the strategies I used during questioning?

Other ideas and thoughts I have after discussion with my peers: