

Standard III **Element D**

LEVEL 2 PRACTICES

THE TEACHER:

3 *Uses questioning strategies to develop students' critical-thinking and problem-solving skills.*

Questions that develop students' critical-thinking and problem-solving skills require them to think beyond just a recall of facts. Challenging questions ask students to process information on all levels of Bloom's Taxonomy. As the teacher plans for these questions, he must consider the critical elements of the content students need to master, the age of the student, and the needs of each student. Questions that challenge students may vary depending on a student's academic needs, language needs, or experiences. Therefore, planning questions prior to instruction is critical.

It is important for teachers to recognize when students may need questions and tasks scaffolded based on Bloom's levels of thinking. (*See also [Standard I, Element C.](#)*) Some students need to obtain the information and skills necessary to think across the levels of Bloom's Taxonomy. Many teachers make the mistake of beginning with evaluative or creative questions and tasks and then complain that their students can't meet expectations. This may be due to lack of scaffolding that supports students in building the knowledge and skills necessary to think at these levels.

Impact on students of developing their critical-thinking and problem-solving skills:

- Students can make connections to their world and to their learning.
- Students are led to think more deeply and independently.
- Students are led to take more ownership of their learning.
- Student motivation increases as they become more cognitively engaged in the learning process.
- Teachers are able to assess and provide feedback on students' learning and thinking.

Refer to these internal resources for additional information and classroom ideas:

- [Bloom's Taxonomy Question Types](#)
Document lists the levels of Bloom's Taxonomy with corresponding verbs for use in creating questions. It should be noted that the use of the verbs alone will not generate challenging questions. Teachers need to plan for their use purposefully as it relates to the type of thinking students need to do.
- [What Does it Mean to Scaffold Questions and Tasks](#)
Document includes research on the importance of scaffolding questions and tasks. Examples aligned to social studies and reading learning objectives are provided.

Refer to this external resource for additional information and classroom ideas:

- Website: Kathy Schrock's IPADS4Teaching H.O.T.S for Bloom's
<http://www.ipads4teaching.net/hots-for-blooms.html>
Website provides ideas for teaching higher-order thinking skills and incorporating technology in a manner that enhances student learning.

4 *Uses wait time to encourage student responses.*

Mary Budd Rowe, Professor of Science Education at the University of Florida, discovered that the only difference between classes in which students posed questions and those classes in which they didn't was the amount of "[wait time](#)" provided by a teacher. She went on to identify two types of wait time used by effective questioners:

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- Wait Time 1 – after asking a question, before designating a student to answer;
- Wait Time 2 – after a student responds, before the teacher reacts or comments.

Subsequent research has confirmed that when teachers use adequate wait time (3-5 seconds) that students give longer responses, give evidence for their ideas and conclusions, speculate and hypothesize, ask more questions, and answer with more confidence. (Walsh & Sattes, 2005, p. 81)

The effective teacher models and labels wait time for students so they begin to provide this for their peers. Students learn that everyone does not process at the same rate or in the same manner. When students learn to provide each other with wait time, the depth of class discussions and student-to-student interactions can increase, resulting in increased learning for all.

Benefits of wait time for students:

- The number of their “I don’t know” and no answer responses decreases.
- The number of volunteered appropriate answers by students greatly increases.
- The scores of students on academic achievement tests tend to increase.

Benefits of wait time for teachers:

- Teachers tend to use more varied and flexible questioning strategies.
- Teachers ask questions that require more complex processing and higher-level thinking.
- Teachers are able to accurately assess more students due to increase in student responses and processing time.

Planning/Coaching Questions

- How do you establish expectations at a level that challenges all students?
- How do you model critical-thinking and problem-solving skills to students?
- How do you provide opportunities for students to apply critical-thinking and problem-solving skills?
- How do you ensure the questions I ask are challenging for all students?
- How do you plan for the scaffolding of questions?
- How do you ensure all students are provided appropriate wait time?

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