Core Function	Classroom Instruction

Effective Practice	Deliver sound instruction in a variety of modes: Teacher-Directed Instruction (Whole-Class or Small Groups)/ Interacting with Students

Indicator: All teachers use open-ended questioning and encourage elaboration. (4426)

Explanation: The evidence review suggests that there has been a shift over time in instructional practice regarding the use of questions – from evaluative, closed-ended questions to open-ended, exploratory questions that facilitate higher-order thinking for students. These types of questions are supportive of a more student-centered classroom environment, in which teachers serve as facilitators and coaches for student learning. All teachers take this approach to instruction, carefully planning their opportunities for and types of questions in advance to ensure appropriate scaffolding and alignment to standards and instructional goals. Teachers support their students in the journey from lower-order thinking to higher-order cognitive processes, and they support each other in improving their practice. Administrators provide feedback, support, and flexibility in schedules to allow for teacher observation and collaboration.

Questions: Are instructional questions being used in a way that facilitates deeper thinking instead of for evaluative purposes? Are teachers' questions to students pushing them to think more deeply or expand on their thoughts? What strategies will teachers use to support students in developing higher-order thinking skills? What type of scaffolds will be put in place in classrooms for struggling students? How will questions look different across different content areas or grade levels? What professional development will the school provide for teachers to grow their practice in this area? How will the school administration support teachers who may need to adapt their current instructional practices?

How Instructional Questioning Has Evolved in Recent Decades

Questions can serve many different purposes in the classroom – they are sometimes needed to re-engage students in the lesson, help build relationships between the student and the teacher or between students, or uncover what students know and can do (Manouchehri & Lapp, 2003). While the strategic use of questions by teachers during instruction has long been studied, the purpose and methods of this technique have evolved over time. A plethora of researchers during the 1970s and 1980s looked at the practice of questioning, viewing it as a means of assessing student knowledge. Researchers especially highlighted the importance of "wait time," allowing all students to have sufficient space to formulate their thoughts and responses before having to answer. However, this research must be viewed in the context of teacher practice that was current at its time; most classrooms were significantly teacher-centered, where the teacher was viewed as both the provider and evaluator of student knowledge (Chin, 2006).

As instructional practices have shifted in recent decades, the role of the teacher has adjusted accordingly. Classrooms are now encouraged to be more student-centered, with the teacher seen as a facilitator of student learning. With changes in instructional delivery, changes in questioning methods and purposes followed; in more student-centered classrooms, teachers ask questions to learn more about how students think than about the concrete facts that they know. It is difficult for students to give a one- or two-word answer when they are asked a question about their cogni-

tive processes, so students are encouraged to think and share in a more elaborate way (Peterson & Taylor, 2012).

Why Open-Ended Questions Are More Useful to Teachers and Students

The ways in which teachers use questions as an instructional tool can impact the way students think, optimally leading them into deeper cognitive processes that further their engagement and learning (Chin, 2006). However, the more traditional, authoritative style of instruction often indicated to students that there was a single right answer that they should know, which required very little cognitive thought (Peterson & Taylor, 2012). Even worse, being called out to identify that singular answer often made students feel pressured and uncomfortable (Heritage & Heritage, 2013). Manouchehri and Lapp (2003) found that a teacher's closed questions actually controlled students' responses when they were framed in such a limiting way. Ultimately, these types of direct, evaluative questions did not actually give the teacher much information at all about what the students knew.

Teachers who strategically use open-ended questions have a different purpose in mind. They use their questions to facilitate deeper thinking and greater learning experiences, not just as a means for gathering data or evaluating students. Yet the information that they do get from this type of technique is far more useful; they gain insight into the process of student thought – how they are thinking about the course content and how well they can extend those thoughts further (Chin, 2006). Teachers can also see where groups of students are struggling and when re-teaching of material may be necessary (Rosenshine, 2012). Because teachers employing this strategy are truly trying to learn about their students' progress, students often see them as more neutral or as a partner, instead of as an authoritarian figure (Chin, 2006; Heritage & Heritage, 2013).

How Teachers Can Improve Their Questioning Techniques

The traditional modes of questioning did not take much preparation for teachers – closed-ended questions with a single right answer are easily asked during the course of a lesson, without prior planning (Heritage & Heritage, 2013). Yet open-ended questions – typically beginning with "how" or "why" – require careful thought on the part of the teacher, to ensure alignment with instructional goals and desired student outcomes (Manouchehri &

Lapp, 2003). Multiple researchers stated the importance of advance planning of questions and the need for teachers to be reflective about the types of questions they are asking in their classrooms (Manouchehri & Lapp, 2003; Smart & Marshall, 2012). Manouchehri & Lapp (2003) state that, "Asking good questions is a sophisticated skill that needs practice and thoughtful planning, as well as reflection on and analysis of the … pedagogical goals of lessons" (p. 564).

Higher-order thinking and the corresponding increased expectations may not come naturally to all students, so teachers need to be purposeful in how to introduce it and support students through the adjustment process (Peterson & Taylor, 2012). Teachers may need to model what it looks like to respond to a higher order question, and tools such as sentence prompts or probing questions can provide a scaffold for reluctant or struggling students to learn the process of moving from lower-order to higher-order thinking (Peterson & Taylor, 2012; Smart & Marshall, 2012; Heritage & Heritage, 2013). Incorporating oral and written questioning, along with listening and reading tasks, can help reinforce deeper thinking as well, in activities such as reflection journal prompts, structured peer conversations, or "think-alouds" with the whole class (Peterson & Taylor, 2012; Rosenshine, 2012; Smart & Marshall, 2012).

Other students can be powerful supports and examples for their peers who need additional help. Students who can "explain, justify, and rationalize within the social context of the classroom… become cognitive models for peers, which can in turn facilitate the development of similar problem-solving strategies for these students" (Smart & Marshall, 2012, p. 16).

Teachers need to think about their own role in the process of teaching and learning, not just about the types of questions they ask. In multiple observations of effective questioning methods, researchers noted the demeanor and presence of the teachers and the impact they had on student responses. Instead of saying that a response was correct or not, teachers often repeated what a student had said, as a means of validation, before asking follow up questions (Chin, 2006). Smart and Marshall (2012) also discuss how even when a student does give a correct answer, teachers who are effective in questioning will still follow their response with a question – pushing the students to take their thinking to a higher level and justify or rationalize their answers.

Teachers can also adjust the direction of the conversation if an incorrect answer is shared; within the discussion, the teacher can ask more questions or share additional information that very quickly re-teaches a concept (Rosenshine, 2012). In one study, a teacher, upon detecting an error in student vocabulary, chose to ask the student for clarification for her own understanding – a gentle and non-confrontational way to address a mistake (Heritage & Heritage, 2013). These types of redirection put the onus back on the student to self-evaluate and adjust their processes or responses, and there is evidence to believe that this change in expectations can make a difference. Classrooms channeling higher-order thinking saw increases in test scores and academic performance, as well as improvement in student motivation and engagement (Smart & Marshall, 2012; Peterson & Taylor, 2012).

How Schools Can Support Teachers in This Shift

Much like the process of moving from lower-order to higher-order thinking reflects a change of routine for students, it is a dramatic change for teachers as well. Teachers who were accustomed to spontaneous, closed questions for evaluative purposes may need support in adjusting their professional practice. Some teachers may need to observe others who already use this practice, and Smart and Marshall (2012) encourage administrators to support teachers in seeking out these opportunities to observe. Peterson and Taylor (2012) studied schools that made impactful questioning a school-wide priority, using grade-level teams and teacher-led study groups that crossed grade levels as means for collaborative planning, drafting higher-order questions, and providing peer feedback on observations. These groups became not only a workgroup, but also a means of support for teachers as well (Smart & Marshall, 2012).

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