



Indicator Explanation



DOMAIN	EFFECTIVE PRACTICE	INDICATOR
Instruction	Provide rigorous evidence-based instruction	3B.9 Teachers stretch students' interests to find value in new topics and connect learning tasks to students' personal aspirations.

Explanation: Teaching to include students' interests is important to build student motivation, but teachers cannot limit themselves only to existing topics of student interest. In addition, they must find a way to spark student curiosity about topics that students are not interested in or about which they may have no knowledge. Broadening students' topics of interest allows them to generate new personal aspirations.

Questions: How can teachers build enthusiasm for topics in which the student may not be interested or has no knowledge of? What are some strategies teachers use to introduce their lessons to pique a student's interest? How can teachers use the Question Formulation Technique (QFT) to help students build curiosity and interest for new topics?

Curiosity is the name we give to the state of having unanswered questions. According to Washburn (2012), when we realize that we do not know all there is to know about something in which we are interested, we want to pursue finding out more. We act as though what we do not know is more important than what we do. Students are naturally curious or motivated to learn more about topics they are interested in. For example, if a student is already interested in the way things work, they are probably more engaged in learning about science or physics (Lee & Anderson, 1993; McCombs, 1991, 1992, 1993). Students who are interested "or see a connection between academic tasks and their own future goals...are more likely to expend persistent effort and exhibit academic behaviors that support school success" (Farrington et al., (2012). The teacher's challenge then is to nurture that same persistence and engagement with a topic or task for areas in which the student has not shown prior interest or of which he does not have prior knowledge. This goes beyond the idea of mindset, although this can play a role in reinforcing the value of effort in any topic or task, by including the teacher's unique ability to know what the student's interests are, to build from those interests into new topics of study, and to present the ideas in such a way as to build enthusiasm and curiosity about the topic.

The challenge for teachers is strategizing to build student curiosity about and interest in a range of topics, both to give students more learning opportunities and to give them more alternatives in their personal aspirations. The unspoken or underlying tenet of being able to spark a student's interest, motivation to learn, or curiosity is the relationship implied between the teacher and the student. As Redding (2016) writes, the teacher's relationship with the student:

...adds onto the standard definition of personalization two new elements. First, it introduces the teacher as a central figure, engaging the learner in identifying what is to be learned and in the design of how it is to be learned, intentionally building students' personal competencies that propel learn-



ing, and forming relationships with the students and their families to better understand the student, the student's needs, and the student's aspirations.... Second, the definition implies that the relationships are important in personalization. (p. 2)

In this role, the teacher is uniquely positioned to 1) know what the student is interested in and 2) build from those interests into other topics or studies that the student may not know about or that the student does not currently express interest. A teacher with her “relational suasion” (Redding, 2014, p. 7) can motivate a student to tackle even a formerly unpleasant or undesired task because the student now has an internal motivation to not only please the teacher, but also to gain new mastery for herself.

Teaching students to ask questions is one of the best ways to help them build that curiosity and inquisitiveness. According to Rothstein and Santana (2011), formulating one's own questions is “the single-most essential skills for learning” and should be taught to all students. They go on to point out that teachers often ask students if they have any questions, but they rarely teach them how to ask questions to pursue possible new areas of interest related to a topic. Like any skill, asking questions can be taught and practiced, and with the 21st century emphasis on self-directed learning, this skill is increasingly important. The QFT (Rothstein & Santana, 2011) is one effective method of teaching this skill.

The QFT provides a deliberate way to help students cultivate question-asking skills. Question asking is not only a method for engendering student and curiosity; it is also a skill that is fundamentally important for all learning. There are six steps to the QFT:

Step 1: Teachers Design a Question Focus. The Question Focus is a prompt to direct student attention and quickly stimulate the formation of student questions. The Question Focus can take any form, including written, visual or aural. The prompt is not a teacher's question, but rather something for the students to use to start generating their own questions, independently, to explore any range of ideas that may occur to them.

Step 2: Students Produce Questions. Students use a set of rules for producing questions without assistance from the teacher. The four rules are: ask as many questions as you can; do not stop to discuss, judge, or answer any of the questions; write down every question exactly as it was stated; and change any statements into questions. The rules provide a structure for an open-ended thinking process, allowing students to ask any and all questions that occur to them.

Step 3: Students Improve Their Questions. Students then improve their questions by analyzing the differences between open- and closed-ended. With teacher assistance, the students sort their questions into two categories. The teacher leads a discussion of the advantages and disadvantages of both kinds of questions. The students then change at least one open-ended question into a closed-ended one, and vice versa, which helps them to think about how the phrasing of a question can affect the depth, quality, and value of the information they will obtain.

Step 4: Students Prioritize Their Questions. The teacher, with the lesson plan in mind, offers guidelines for the selection of priority questions. These questions may be prioritized according to a student's individual interests. During this phase, students move from thinking divergently to thinking convergently, determining the target of their inquiry, and planning steps for getting the information they need to answer the questions.

Step 5: Students and Teachers Decide on Next Steps. At this stage, students and teachers work together to decide how to use the questions. This step may be done as a large group, small groups or individual students, depending on the teacher's goals for the lesson.



Step 6: Students Reflect on What They Have Learned. The teacher reviews the steps and provides students with an opportunity to review what they have learned by producing, improving, and prioritizing their questions. Making the QFT completely transparent helps students see what they have done and how it contributed to their thinking and learning.

Once the QFT process is complete, the students can start investigating the answers to their questions. Teachers should allow students to “cast a wide net of questions” (Washburn, 2012) and explore a diversity of sources and source types in seeking the answers to those questions. Teachers should allow students plenty of time to pursue and discover new information and answers thoroughly.

What is the research basis for the QFT?

The QFT procedure has been demonstrated effective in healthcare settings (Alegria et al., 2008; Deen, Lu, Rothstein, Santana & Gold, 2011) and education (Elves, 2013; Rothstein & Santana, 2014). The classroom studies conducted by Elves (2013) demonstrated that by teaching students questioning skills through QFT they were able to conceptualize questions and pursue answers to those questions independently, “without having to depend primarily on teacher questioning to provoke or promote their natural curiosities” (Elves, 2013, p. 2). Further, Rothstein and Santana (2014) report that teachers who have used the technique in primary, middle, and high school classrooms across all subject areas in a wide range of communities have reported “newly energized students who are excited by learning to ask their own questions.”

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