

## Chapter 8 - Teaching Questioning 1

How does a teacher develop the questioning powers of young ones? What are the classroom moves, tactics, strategies and tricks first mentioned in Chapter 5 on quality teaching?

As with many complex tasks, the best way to learn effective questioning is by doing it under the tutelage of a master. Training will not suffice. Sustained, deep growth in skill requires a learning process more like an apprenticeship.

It is possible to provide whole class instruction in various strategies, but there is always the danger that such lessons will not stick if the learning takes place apart from authentic inquiry. Skills acquired in isolation rarely take root or become well integrated components of a thinker's repertoire.

The teacher must address two strands that operate in tandem.

The first strand is just in time instruction in specific questioning strategies, with the teacher equipping students with just what they need just as they discover they need it or just before they realize they need it. Usually this instruction occurs in the context of conducting an investigation or problem-solving activity.

The second strand is the coaching of investigative activities while they proceed. When it comes to encouraging student questioning, the teacher must move aside but not away. The teacher does much less imparting of information as activities focus on exploration and discovery. Students do the digging and the tough thinking while the teacher acts more as a consultant than an expert, supporting, guiding and helping to structure the investigation or thought process to increase productivity.

The effective teacher acquires and practices a repertoire of strategies that place primary responsibility for inquiry with the students.

- A. Setting Up the Task
- B. Creating a Culture and an Ethic
- C. Checking on Progress
- D. Intervening to Improve Results

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### A. Setting Up the Task

Past efforts aimed at promoting what was called inquiry learning often floundered because proponents underestimated the importance of structuring the activities so that students were able to make good progress without much lost time or inefficiency. These proponents sometimes trusted too much in the natural curiosity and skills of young ones when asked to pursue issues and problems of great interest.

Many of us learned the value of scaffolding activities during those days, adding the structures, the clear directions and the pathways to produce better results. This structuring process is a matter of sound instructional design meant to replace the time-honored but discredited strategy of assigning topics and sending students to the library to “do research.”

When research is nothing more than cut-and-paste collection of facts and information, little is required from teacher or student, but the challenges of more demanding research questions can lead to major frustration and failure if students are not adequately prepared or guided along the research path.

The old pathway for topical research was quite simple:

1. Go to the library.
2. Find the right encyclopedia volume.
3. Find your country.
4. Start copying words and information onto index cards.
5. Change one word in each sentence.

Little was required in the way of instructional design because the teacher did little more than assign a topic and grade the resulting paper.

Challenging questions, in contrast, require search pathways that are serpentine and complex. The research process might seem at times more like riding a roller coaster with twists, turns, dips and surprises around each corner. At other times the process might resemble a midnight walk through swampy terrain.

If a teacher expects to devote several weeks to serious research by students, it often works well to map out some of the pathways in advance. By outlining these for students, the teacher speeds them along their way.

The danger, of course, is when we do too much for students and develop dependency relationships or unduly control their thinking and exploration. We would hate to see students understanding by design

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just what we want them to understand. That would fulfill Pink Floyd's warning about mind control. Scaffolding and structure should ultimately drop away as young ones incorporate such structures and procedures into their natural ways of thinking, just as scaffolding is removed from a new building upon completion.

We introduce thinking structures such as graphic organizers early in the school experience with the hope that these organized ways of approaching complex challenges will become part of the students' enduring mindware. Once mastered, they form the basis for independent thought, invention and production.

When handled appropriately, scaffolding offers a number of important advantages:

- Provides clear directions
- Clarifies purpose
- Breaks down complex tasks into manageable components
- Keeps students on task
- Offers assessment to clarify expectations
- Points students toward worthy sources
- Reduces uncertainty, surprise and disappointment
- Delivers efficiency
- Creates momentum

For a full explanation of each of these features, consult "Scaffolding for Success," published in the December 1999 issue of **FNO** at <http://fno.org/dec99/scaffold.html>.

After decades of viewing school research as a relatively simple matter not really requiring much attention to instructional design, it is apparent that simplicity was an illusion rooted in the failure to conduct authentic research on matters of import.

Once goals are elevated to match state or provincial curriculum standards, and students are expected to wrestle with difficult questions, instructional design becomes paramount.

- Questions that require smart choices
- Questions that demand apt solutions
- Questions that call for imagination
- Questions that take a month, a year or a lifetime
- Questions that matter
- Questions that are unanswerable

Sound design of a research unit requires attention to all of the following aspects of learning:

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**Clarification of Learning Goals** - The first and most important task of all is the identification of content and process goals. In the past, content received the most attention with the emphasis upon topical research, but there was too little attention to the kinds of thinking skills that might be nurtured or the types of concepts that might be learned. By putting a greater emphasis upon thinking challenges, the unit design changes dramatically.

**Consideration of Options** - Once clear with regard to learning goals, the lesson designer examines a wide range of possibilities, casting aside many of the old fashioned research rituals such as hunting and gathering or trivial pursuit in favor of activities that will pay richer learning dividends. The designer considers all of the following aspects of the unit plan:

1. *Instructional Strategies* - What will the teacher do to prepare students for the tasks at hand? How will the teacher provide instructions, directions and clarification? When will the teacher step forward to direct activities and when step aside to emphasize student exploration?

2. *Learning Strategies* - How should students proceed? What pathways make sense? How can the teacher make these evident and guide students to productive inquiry? When should the teacher intervene to introduce new skills or redirect activity?

3. *Tools and Resources* - Different types of inquiries require different kinds of tools. Which make sense for the task at hand? The designer makes choices here based on value and reliability rather than fashion. If the best information resides in print resources, the unit will focus appropriately. If local rainwater must be collected to measure pH, then the choice of tools might include probes and handheld devices. If teaming is a major goal, the designer must take care to avoid saturating the class with too much equipment.

4. *Content* - The collection of information is no longer the chief purpose of the research, as information will now be synthesized and utilized to create new understandings. The designer will consider how to guide students in the process of determining which types of information will prove most

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pertinent and most illuminating for the thinking task at hand.

5. *Landscape* - Because the physical arrangement of the learning space can have quite a strong influence upon the types of learning that might occur, the designer will consider how to manage that aspect of learning so as to optimize results. If teaming is valued, for example, certain kinds of tables work better than others. What are the best ways to design the layout so as to support the activities?

6. *Organization* - What are the best ways to lay out tasks so that expectations are clear and how should the work be divided or shared across members of the class? Should the teacher establish leadership or team structures? How much scaffolding is healthy?

7. *Norms* - What kinds of group attitudes and behaviors will best sustain the research effort, and how can the teacher promote or grow those attitudes and behaviors until they become characteristic, routine and enduring?

***Creation of an Action Plan*** - While the old fashioned topical research project required little more than adherence to time-honored rituals, authentic investigations require more planning and staging of events and activities. Some of these can be done in advance, but much of this planning must evolve as the learning takes place. The twisting and often baffling turns of research demand flexibility and resourcefulness - the ability to switch gears, directions and strategies as learning occurs. The teacher sets up the basic framework of events - a skeleton suggesting activities in reasonable stages - but the students must cut their own pathways as they struggle with their questions.

***Adaptation and Adjustment*** - Because this type of learning is full of surprises, rigid adherence to plans is counter-productive. The teacher must be quick to roll with the punches and ready to switch gears, directions and strategies as events unfold and the research progresses. There are no reliable maps and charts. Authentic research is likely to uncover much that was unanticipated and the inquiring mind will wander far from the highways of conventional thought. Path breaking is an apt analogy as the thinker must cut through thickets of underbrush and find a way through terrain rarely traveled.

The teacher could not possibly anticipate all of these surprises or

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prepare the class for them. In some ways it is like white water rafting on a new river without a guide or map. The rafters have no way of knowing what lies around each corner and must rely upon strength, resilience, resourcefulness and quick reflexes to match skill and strategy to challenge. They must have a repertory of skills to fit all occasions and all challenges.

The teacher can coach this process but must remain to some extent upon the sidelines or shore, allowing the young thinkers to struggle with the challenges. If the teacher pitches in and does too much paddling, the students are robbed of genuine struggle and learning.

“You might want to try X,” the teachers calls out with a bull horn from the shore.

The teacher can also provide a different context, effectively changing the river or playing field on a particular day.

“Let’s spend today looking at counter theories,” the teacher suggests. The students put their canoes and rafts into shore and shift activities.

“Who has done work that stands in opposition to the angle you are working on? Why did they head in that direction? Were they totally crazy or did they have a clue?”

### **B. Creating a Culture and an Ethic**

There is little in the preparation of most classroom teachers that would equip them to build collaborative communities of learners. Some teachers may have participated in professional development offerings that stress collaboration, but that is rare.

The moves, tactics, strategies and behaviors of a teacher in this classroom are quite different from those required in more didactic classrooms. These days teachers must be able to move back and forth on a spectrum between those two poles, lecturing at times with pizzazz, spirit and passion when the content requires or invites that approach but acting at other times to encourage the development of cooperative norms.

Because each class of students presents a unique challenge and is unlike any other group, the teacher must be skilled at observing the group to determine what kinds of behaviors and attitudes they show when approaching various tasks. This observation process never stops as the teacher tries to equip each student with the skills and understandings that will help them function effectively as a community of learners. The development of these attitudes and skills must proceed over many months.

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In most cases, the development of collaborative norms and behaviors never comes to an ideal state. Each group will struggle with its own peculiar traits and tendencies. Sometimes they will attain impressive levels of harmony and productivity, but often they will slip and slide into difficult terrain as the nature of the work can be unpredictable and far from routine. Smooth functioning thrives on routine but flounders in the face of surprise.

The teacher, then, must remain alert to these ups and downs, phases and patterns, intervening and supporting when advantageous.

Not only does the teacher work like a gardener to promote the growth of a harmonious culture, she or he also establishes an ethic, a set of beliefs about the importance of the work being done and the value of the group effort.

What's it all about?  
Why are we here?  
Who are you?  
What is the best you can do?  
What are the important issues of life?  
What kind of thinker are you?  
What kind of group is this?

From the first hour of class, the teacher presents the class with a powerful myth and devotes the entire year to its birth and extension. The myth may take weeks before setting roots and sprouting, but it is always evident in the words and actions of the teacher.

“This is a group that asks good questions.”  
“This is a group that avoids harsh comments.”  
“This is a group that persists even when the going gets frustrating.”

In the first weeks of school, some of the students may find these types of statements hard to swallow, especially if their prior experience has cut in the opposite direction. Some students will actively challenge such positive norms, hoping to supplant them with more cynical, cool behaviors and attitudes.

But the teacher persists and persuades and recruits until the momentum of the group is mostly positive and the negative voices find less and less encouragement.

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### C. Checking on Progress

When students are exploring challenging issues and questions, the teacher watches over the process, monitoring the flow and keeping an eye on how the group is progressing. Asking students to do such work highlights the responsibility of the teacher to make sure the time is being spent productively and the students are functioning capably.

During these periods, the teacher will focus on observation and orchestration, intentionally stepping back but not away from the learning activities. As will be outlined in the next section, this watchful behavior provides the diagnostic basis for supportive interventions of various kinds.

To perform these functions well the teacher will move about from group to group and individual to individual, doing some assessment of progress through unobtrusive eavesdropping and by noticing various physical signs of focus, distraction and disruption. This movement may be supplemented by various conferencing strategies which involve calling groups or individuals to the teacher's desk or work area to discuss how the work is going.

Some teachers are concerned that a classroom focused on inquiry will become chaotic, that the students will wander off task and waste time. These concerns, along with the time-consuming nature of inquiry, serve to block some teachers from instituting this kind of learning. But the chances of chaos are minimized by the structuring mentioned earlier, especially when combined with the vigilance suggested here. When the teacher engages appropriately, the classroom will buzz with productivity.

The teacher must not stop teaching, must not abdicate responsibility for assessment and monitoring, though not all classroom teachers understand this dimension of teaching or know what the craft moves and procedures are required to make the teacher's presence an important influence on the work.

As an example of abdication, a teacher might set the students in motion and then retire to correct papers, looking up from that work only occasionally to make sure the students seem to be working quietly and well. This kind of distance does not work. The teacher must frequently come up alongside students, peer over shoulders and watch the actual work being done without too often "getting in the face" of the students. Since much of the work cannot actually be "seen" in some physical sense, the teacher must also be skilled at asking questions to uncover the work that is happening out of sight.



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“How is it going?”  
“What are you working on now?”  
“Have you encountered any frustrations?”  
“What is your main strategy?”

Unfortunately, this style of teaching is poorly understood and little professional development has been provided in most places for the type of classroom management and inquiry management skills required to achieve the activity and results desired.

Enthusiasts have jokingly contrasted this approach to lecturing by calling it “The Guide on the Side” as opposed to “The Sage on the Stage,” but some critics (Oppenheimer, 2003) have seized upon this simplistic notion to ridicule the movement for being some kind of lax and sloppy way of organizing learning. They watch the teacher who has moved too far to the side and rightly see that as bad teaching but they do not understand how a teacher could effectively combine structure and presence to move to the side without abdicating.

The emphasis here should be on the word “guide” as it captures the ongoing intimate engagement of the teacher with the research being conducted. Sadly, some teachers see their job narrowly as the assigning and correcting of research and do little to watch over the daily activities. In these classrooms, students are incorrectly left to their own devices and the teacher is unlikely to know if the inquiry is floundering until the work products appear. By then, it is too late to intervene.

Observation is not enough. The process is diagnostic. As the teacher notices what is happening, this awareness leads to the action described in the next section.

### **D. Intervening to Improve Results**

As the teacher performs the diagnostic process outlined above, the focus moves to action.

Which of the following are appropriate for each situation?

questioning	proding	seed planting	cheering
focusing	redirecting	widening	provoking
deepening	critiquing	guiding	suggesting
directing	modeling	clarifying	validating
defining	translating	reminding	encouraging
sharpening	challenging	recommending	
moderating	disciplining	trouble-shooting	

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The student is more apt to learn to practice effective questioning and wondering if the teacher knows how to intervene at the right time with assistance that supports rather than supplants the thinking of the student. It is tempting to step in heavily but that type of intervention produces little of the autonomous behavior and independence we seek to promote. The most effective intervention is likely to be a light touch, a prod, suggestion or thought provoking question that leaves primary responsibility with the student.

Knowing which light touch to apply in each case requires a blend of experience, judgment and good fortune, as the process is somewhat experimental.

During a teacher's career, it is desirable to acquire thousands of moves, tactics, tricks and strategies to promote learning.

The richer and more diverse this repertoire, the better the prospects for the teacher to match the move and tactic to the situation at hand.

The next chapter will explore further the list of interventions shown on the previous page, providing examples of each and suggesting when they tend to be productive.