

Extract from: The Main Idea

The Skillful Teacher: Building Your Teaching Skills

by J. Saphier, M. Haley-Speca and R Gower

Skillful teachers are made, not born. This does not mean that there isn't more to teaching than skill – such as being a thinking, feeling being – but there is no good teaching without skill. Skillful teachers are clear about what is to be learned and what they are going to do to help students learn it. If one thing doesn't work, they try another plan that is also well thought-out. Skillful teachers are always learning – they are students of teaching.

There are three important areas that skillful teachers develop expertise in and these three concepts guide the discussion of teaching in this book: comprehensiveness, repertoire, and matching. Comprehensiveness has to do with an awareness of all of the areas of performance involved in running a successful classroom. Repertoire refers to the variety of strategies teachers have at their disposal to deal with different teaching situations. Matching is what helps teachers choose an appropriate strategy from their repertoire.

MANAGEMENT	Attention Momentum Space Time Routines Discipline
INSTRUCTION	A. Clarity B. Principles of Learning C. Models of Teaching
MOTIVATION	Expectations Personal Relationship Building Class Climate
CURRICULUM	Curriculum Design Objectives Planning Learning Experiences Assessment Overarching Objectives

Instruction – Clarity

How do I make concepts and skills clear and accessible to students?

Decades of research show that Clarity skills are vital in creating successful learning experiences. Clarity is about a lot more than speaking clearly in a comprehensible way. Clarity involves scaffolding learning, making learning accessible in varied ways, checking if the material has been learned, and getting inside students' heads to identify confusions. These repertoires form a bedrock of good pedagogy.

Consider the teacher's response when students get $2^3 \times 2^2$ wrong (they write 4^5). "What many of you did," says the teacher, "was to multiply the 2's. That's wrong. It's 2^5 ." He erases the other answer and writes the correct one. This teacher has neglected clarity. He didn't check to see if the students understood the rule, he did not ask students to explain their conceptual understanding, he didn't explain the process to solve the problem, he did not solicit student participation to see who was still confused, nor did he see if students could now do a similar problem.

Teachers who have mastered clarity can deliberately help students assimilate, integrate, remember, and be able to use concepts and skills. This chapter describes research-based teacher behaviours that help with Clarity, organized into five larger categories.

I. FRAMING THE LEARNING

Research has shown that helping students make connections to an upcoming topic prior to studying it improves student learning. Below are some teacher behaviors to help students frame the larger picture.

1. Framing the Big Picture by ensuring that students understand the following:

Objectives – Let students know what they will know or be able to do as a result of the lesson. It is not enough to just post this on the board. Teachers need to make sure students know what the objective is and what it means. We can't know this unless we ask them. In one class, students get extra points if they can describe the objective to a visitor and how the activity ties into the objective.

Itinerary – Like an agenda, this tells students how they'll get to the objective during an activity or a period.

Big ideas – Remind students how the lesson connects to the big ideas in the unit. "The water cycle is one of the natural processes the earth uses to keep itself alive. We're exploring whether that cycle is in any danger and if we can do anything about it."

Reason it's worthwhile – This is the answer to "Who cares?" Understanding the usefulness or relevance increases a student's investment in a lesson. This need not happen with every lesson.

Reason for activity – Students often have no idea why they are doing an activity. Tell students why it will help them learn something, “The reason we’re doing this experiment is to show how hard it is to take data and record information simultaneously.”

Criteria for success – A bulleted list of criteria reveals in detail what the students should know or be able to do. Coming up with this list is a planning skill, however, communicating that list is a Clarity behavior. This is discussed in the chapter on assessment.

2. GETTING READY FOR INSTRUCTION

Activating students’ current knowledge – This gets students’ minds in gear about a topic before learning something new. There are many ways to do this. Students can brainstorm what they KNOW about a topic and what they WANT TO KNOW on a chart. Sometimes students need more than a blank paper. Try a “word splash” with 10 to 20 terms from a reading and “splash” them all over the board with the topic written in the center. Students think of sentences for the terms and how they might relate to the topic.

Pre-assessing – If adequate prior knowledge is absent, even a great lesson on new material will go for naught. Even a simple quiz can be used to assess vocabulary and other concepts that will show up in the unit.

Anticipating confusions – Students bring many misconceptions to instruction that they hold onto. We need to remember that students do not come as blank slates. Students may also be confused because the material is challenging. Being able to anticipate confusing points requires the ability to get inside students’ heads.

II. PRESENTING INFORMATION

This section is the part of teaching after “activating” in which we are introducing new ideas and skills.

3. Presenting information through well-chosen Explanatory Devices. There is a large repertoire of strategies to help present information and explain concepts. Because learners take in information auditorily, visually, and kinesthetically, we need to choose a wide range of these devices to reach the most learners. A few of examples of Explanatory Devices are:

Analogies – These help understanding because they connect new learning to something already known. For example, “The growth of a glacier is like pancake batter being poured in a frying pan. As more is added to the middle, the edges spread farther out.”

Models – An artifact students can see and sometimes touch, a model represents an idea or a concept. For example, cut-out graph paper can represent the concept of multiplication.

Mental imagery – A rarely used but powerful tool to help students make pictures in their heads. A teacher can conduct a guided imagery trip of a seed pod traveling from the mother plant to germination or to reconstruct conditions inside the Mayflower.

Modeling thinking aloud – The teacher role-plays what a student would think in her head including being puzzled, making mistakes, self-correcting, and checking herself. It’s like a dialogue with oneself. In this example, the teacher thinks aloud for the class what she does when coming to a word she does not know, “Hmmm, what does this mean? ... better reread the sentence... still don’t get it. Maybe I’ll read ahead to see if it gets clearer... Nope, let’s see – do I recognize any of its parts?...”

Graphic organizer – These are diagrams that represent relationships between ideas. There are many types – mind maps, story maps, webs, concept maps, clusters, etc. For example, if a text compares life in America today to life in 1776 a graphic organizer might have circles and links to show which items are the same in the two time periods, and which are distinct.

4. Speech – the speech of teachers must meet a certain minimum criteria for diction, pronunciation, enunciation, grammar, and syntax.

Avoiding “mazes” or “vagueness” terms – Research studies show the negative impact on student achievement when teachers are vague (use unclear terms) or speak in mazes (with false starts, halts, or redundancies in speech). An example of vagueness (see the italics) is: “This math lesson might enable you to understand a little more about some things we usually call number patterns. Maybe before we get to probably the main idea of the lesson, you should review a few prerequisite concepts.” An example of mazes (see the italics): “This mathematics lesson will enab... will get you to understand number, uh, number patterns. Before we get to the main idea of the lesson, you need to review four conc ... four prerequisite concepts. The first idea, I mean, uh, concept you need to review...”

III. CREATING MENTAL ENGAGEMENT

These strategies have to do with making learning accessible and avoiding obstacles to students' understanding.

5. **Explicitness: Making explicit and not leaving to chance the following:**

Focus of questions – When teachers don't provide explicit explanations, their questions serve as "guess what's on the teacher's mind" – a game that serves no purpose and is confusing to students. For example, a Latin teacher refers to a question in the text and asks, "What type of question is that?" Students don't respond. What the teacher really means is, "Which of the six types of questions from yesterday's handout – quid, cur, quis, quem, ubi, or quo – is this?" This confusion would have been avoided had the teacher been more explicit and provided that extra cue which shows the students how the question relates to their learning.

Necessary steps in directions – Sometimes we direct students to begin a task, but we leave out necessary steps. For example, "Get together in groups of four and brainstorm as many endings for this short story as you can." The teacher omitted the instruction to choose a recorder, so they brainstorm and the ideas do not get recorded. Or a teacher says, "Fix these sentences and move on to the next assignment." Some students write over the words that were wrong (what the teacher wanted), but others recopy the sentences which takes four times as long and prevents them from doing the next assignment.

6. **Making Cognitive Connections:** Making connections to material learned previously

Showing resemblance to student experience or something already learned – Students will better understand when new material is linked to what they've already been taught. For example, TEACHER: We learned that multiplication was related to addition – how? STUDENT: Multiplication is like adding over and over again. TEACHER: OK, Now this division we've been working on today is a lot like multiplication except it isn't a short cut for adding again and again, it's ...? STUDENT: Subtracting it.

Asking students to compare and contrast – This is another way to have students base their new learning on what they already learned. For example, "Compare and contrast the Hemingway short story we just read to the O. Henry story we read last week." This instructional practice is on Marzano's list of those that have a high probability of enhancing student achievement.

Making transitions between ideas or activities – These help students follow the road map as the teacher turns left, then right. One way is to relate the content just done to what is coming up immediately, "That's how the commercial banking system creates new money. Now another way money gets created is through consumer credit." Transitions also help when there will be a change in pace or a change in difficulty, "Now we're moving on to three-step problems instead of two-step, but still with the same operations."

IV. GETTING INSIDE STUDENTS' HEADS

Skillful teachers know when students don't understand and determine what they don't understand.

7. **Checking for Understanding** – the techniques teachers use to try to determine whether students are confused

Reading body language – Teachers may check for understanding by reading postures and facial expressions, but this can be risky as some students provide no readable cues.

Asking checking questions – Periodic questioning is another way to check for understanding. However, we need to be careful when we think we're getting a reading on comprehension when we employ questions that really only check recall of key words. *Dipsticking* – When teachers monitor student understanding frequently and broadly (like a dipstick used to check oil levels).

Teachers can do this in several ways. They can call for student self-assessment by having students use signals – nodding heads or raising thumbs to signal they do understand. However, students may think they understand when they actually don't. A more developed form of dipsticking is to check content from each student. For example, in trigonometry, "When I call for the signal, hold up one, two, three, or four fingers to show in which quadrant the angle will terminate." In English, each student holds a set of cards, S (for sentence), F (for fragment), and RO (for run-on), and the teacher says, "Hold up the appropriate card after I read each of the following." Some teachers pause and give one-question quizzes and then circulate to see how everyone is doing. Some college teachers use electronic devices at each student seat as a means of dipsticking.

8. **Unscrambling Confusions** – after finding out that students are confused, the next Clarity task is to find out about what:

- Do nothing at the moment – "I know this is a little difficult to see just yet, but hang in there and I think it will make sense."

- Reexplain – Either slower, or more detailed, or with a different explanatory device (see the section on explanatory devices)
- Isolate the point of confusion with pinpoint questions—then the re-explanation can focus only on what was confusing
- Have a student explain his or her own thinking – A teacher can probe how a student thinks by asking questions such as, “How did you get that answer? What did you try first and why?” The reality is that sometimes there isn’t enough time to unscramble all of the students’ confusions. Skillful teachers note who is still foggy and makes a provision for a small group session – either then and there or outside of class.

9. Making Student Thinking Visible

So far, there have been examples of checking and unscrambling student behaviors as a way of knowing what is going on inside their heads. However, there is a much broader way to make their thinking visible that has more reach – structuring your class so that student thinking is regularly on display. Below are some indicators that show whether a teacher has structured his or her classroom to make student thinking more universally visible. Note that this is a way of saying, “listen to the children” and it is a profound aspect of successful teaching.

IN CLASSROOMS WHERE STUDENT THINKING IS VISIBLE

Teacher Behaviors

- * Asks students to explain the thinking behind their answers
- * Asks students to make connections to what other students said – agree or disagree
 - * Asks students to add to another student’s comment and facilitates dialogue
 - * Asks follow-up questions to check for understanding
- * Allows students to struggle, and dwells with the student’s thinking, sticking with them

Student Behaviors

- * Do the majority of the talking
- * Are expected to explain their thinking
- * Are willing to admit confusion or not knowing
- * Challenge each other’s thinking nonjudgmentally
- * Take initiative to explain another student’s thinking

V. CONSOLIDATING AND ANCHORING THE LEARNING

10. Summarizing – explicitly pulling everything together

This can be done at the end or in the middle of a lesson. Summarizing can accomplish two important principles that support the retention of learning material: sequence and say-do. Sequence, states that what happens at the beginning or end of an event is what people tend to retain the longest. So, many teachers protect the last few minutes of class for summarizing to increase the chance the lessons learned will stick. The second principle, say-do, suggests that learners take in 70-90% of the material when they are actively involved with it. In summarizing, students must get active with the material in order to organize it and put it into their own words.

There are many ways teachers can ask students to summarize. They can use entries in a learning log and answer questions like, “What did I learn today? What puzzled me? What did I enjoy? Dislike? What did I accomplish?” Teachers can also ask students to do this orally in pairs. In fact, some teachers do this after every 10 minutes of teacher-led instruction (the “10-2 rule”).

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