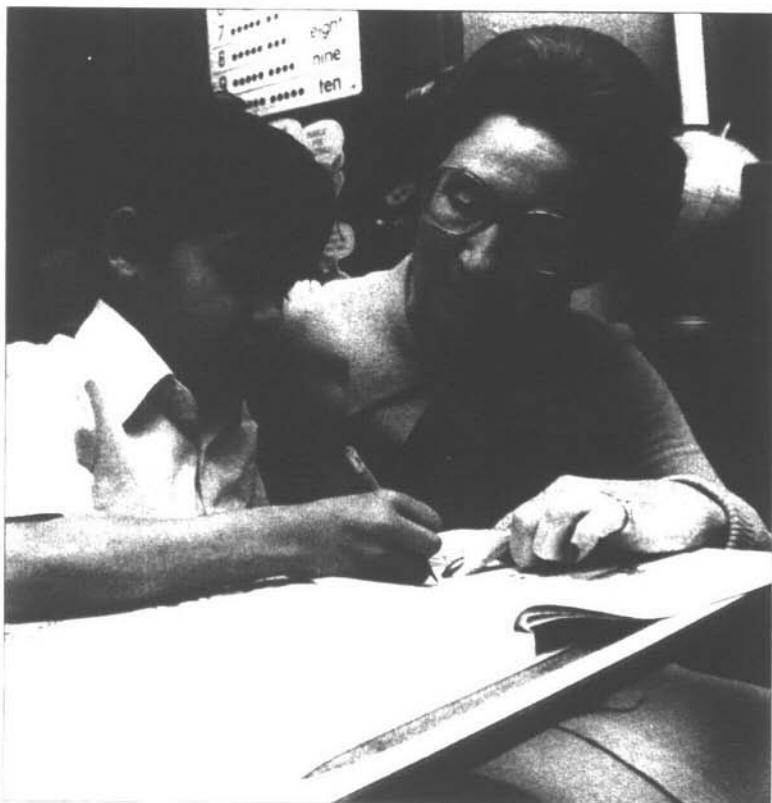


Integrating Teaching Strategies and Thinking Styles with the Elements of Effective Instruction

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Using the elements of lesson design as a foundation, teachers can build student thinking by choosing from an array of appropriate teaching strategies.

Educators are increasingly concerned about enhancing student thinking but not yet sure about the best way to do it. We can introduce special courses in thinking, but that will not guarantee the transfer of thinking to regular classroom work in content areas. We can rewrite our curriculums to include thinking skills, but written curriculum is rarely, if ever, the curriculum in action. Or we can provide teachers with *strategies* that elicit and model various thinking styles. The question is: how can strategies be used to teach the prescribed curriculum in a way that expands and enhances student thinking?

We created three characters to deal with this issue in a question-answer format. Each character speaks for a set of real concerns facing American educators.

- *Carol* is a tough-minded school administrator who recently completed an extensive curriculum writing project in her district. She is searching for a model for teaching thinking that embraces the best work of the cognitive theorists, yet leaves her existing curriculum relatively intact.

- *Mark* is an equally tough-minded administrator but with different concerns. He recently completed a thorough staff development program in effective instruction. His program draws liberally from the works of Barak Rosenshine (direct instruction).

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“...whereas the elements of lesson design describe ways in which all examples of good teaching are the same, strategies describe ways in which they differ.”

Larry Lezotte (teacher expectations and equal opportunities for learning), and Madeline Hunter (principles of learning and elements of lesson design). His goal is to create greater instructional variety without changing the foundations he has carefully laid.

Jean is the moderator. She attempts to build a bridge to join our emerging concern about teaching thinking with our recent successes in making schools more effective.

Teaching Strategies and How They Work

Mark: We've been hearing a lot about teaching strategies and the role they can play in helping teachers vary their instructional techniques.

Carol: We've also heard that they can play a pivotal role in helping students expand their thinking styles.

Mark: Right. Let's start with the essentials. *What is a teaching strategy?*

Jean: The word "strategy" comes from an ancient Greek root meaning a plan to move a group toward a goal. Since classroom teaching generally requires a teacher, a group of learners, and a curriculum objective, we can view a teaching strategy as the teacher's plan for moving learners toward a curriculum objective.

One of the great achievements of education in this century has been the creation and identification of a rich variety of strategies. The idea of a teaching strategy unites thinkers as diverse as Hilda Taba, Jerome Bruner, Donald Graves, Richard Suchman, Harold Herber, David Ausubel, Muska Mosston, and Bruce Joyce.¹ If teachers

want to vary the forms of instruction to help expand their students' styles of thinking, we now have the tools to do the job.

Mark: It's getting clearer. Let's have some examples.

Jean: David Ausubel's Lecture Strategy² calls for teachers to begin by *presenting* an advanced organizer that they and the students will use to structure the information students are about to receive. Teachers can then present the actual information, periodically *asking questions* that require students to recall the information presented and to relate it to the central ideas in the organizer. Many questions ask the students to identify differences and similarities among concepts. Teacher *feedback* either corrects or validates student information or pushes them further into the compare-and-contrast process. Evaluation consists of carefully monitoring students' attention for signs of dissonance or confusion and posing periodic questions that ask students to recall information and to discriminate among the various concepts.

This pattern of presentation, questioning, and feedback elicits and reinforces thinking patterns vital to the development of memory and the ability to discriminate among ideas. It also models techniques that students can use to organize information on their own.

Information, questions, and feedback are handled differently in Jerome Bruner's Concept Attainment Strategy.³ Here teachers *present* not information but positive and negative examples of an idea they want the students to understand. The teacher *asks* students to examine the examples and identify the key characteristics of the idea. He or she encourages students to observe, hypothesize, and verify through further observation.

Here a different strategy of presentation, questioning, and feedback elicits and models a very different kind of thinking. Ausubel's pattern is a lot more teacher-centered. The instructor presents, checks for comprehension, and confirms or clarifies student responses. Bruner's strategy draws more on students' mental activity. They must actively examine and manipulate information, which is then evaluated for correspondence with fact and depth of observation.

Carol: Does this mean I can begin to work toward developing my students' thinking without importing a whole new "thinking curriculum"? Do these strategies cut across different content areas?

Jean: They certainly do. In terms of effective teaching, we already know that the elements of lesson design or the principles of learning apply equally to all types of content. So do the strategies. The difference is that, whereas the elements of lesson design describe ways in which all examples of good teaching are the same, *strategies describe ways in which they differ*.

Mark: Since we've already mentioned Madeline Hunter, I'd like to interject a few of her ideas into our conversation. I'm thinking in particular of four questions she taught me to ask when observing a teacher in the classroom:

1. *Does the teacher monitor and adjust his or her behavior to meet the needs of the students?* The various strategies provide teachers with guidelines to help them monitor and adjust in particular learning situations.

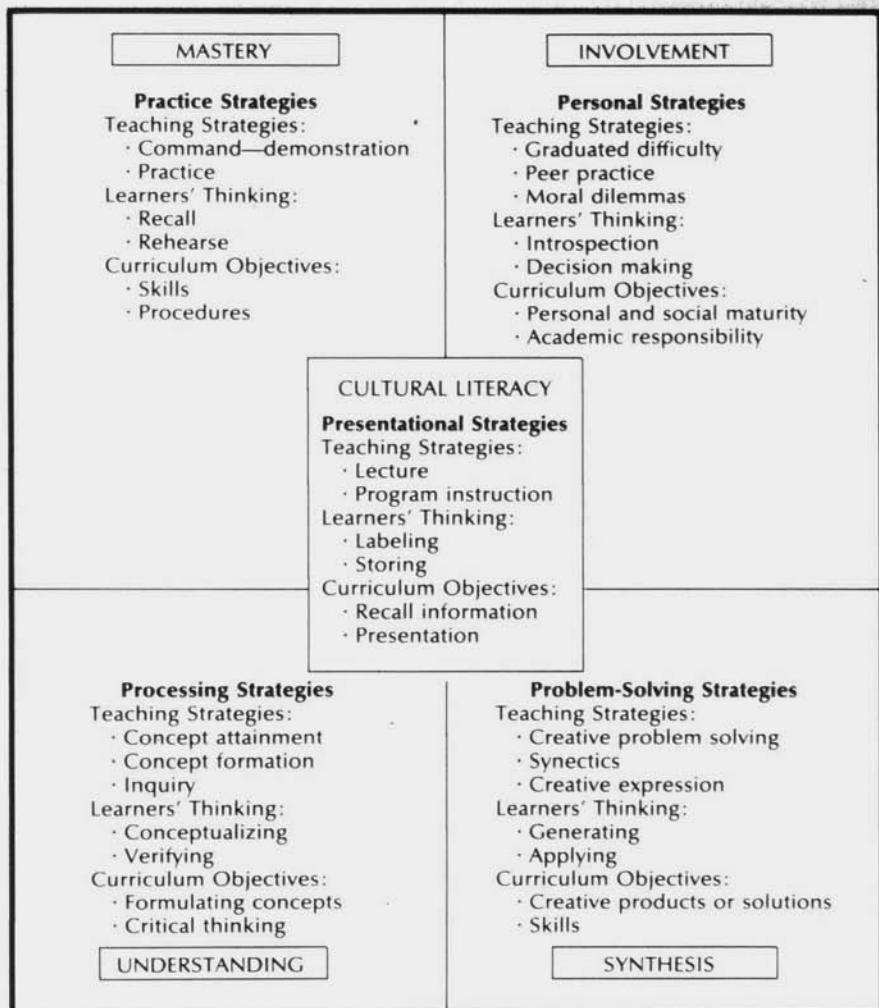
2. *Is the teacher using the principles of learning?* It strikes me that some of these strategies are built on the principles of learning. Years ago I watched a teacher use Taba's Concept Formation Strategy⁴ to introduce a unit on the Middle Ages. In that strategy the students sometimes do the presenting. They generate data, ideas and information, and associations related to the topic. Then they organize their data into groups based on similarities and give their groups descriptive labels. Finally, the students try to find *relationships* among the groups they have formed. Thinking back on that lesson, I was struck by how many of Hunter's ideas on meaning, memory, and transfer were embodied in that strategy. Let's move on to the third question.

3. *Is the learning at the correct level?* This one presents some problems for me.

Carol: And for me. To put it bluntly, what if your students aren't ready for the kinds of thinking a particular strategy requires?

Jean: Then you'd better not use that strategy until they *are* ready. However, we've used all the major teaching strategies in some form or another with students from kindergarten to college, so readiness has little to do with grade

Figure 1. Five Principal Goals of Education.



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level. We've also seen the strategies used with students who have a variety of mental handicaps. So readiness may not be correlated with intelligence—but it is definitely correlated with teaching. Before teachers use a strategy, it's important for them to model and practice the kinds of thinking used in the strategies. Spending a few minutes a day asking students to classify, compare and contrast, hypothesize, and check for verification can pay immense dividends. Also, let's not forget the importance of preparation and

repetition. If the kindergarten teacher uses a variety of strategies regularly, then the 1st grade students are going to be ready to use those same strategies a year later.

Mark: I can buy that, but that brings me to the fourth question.

4. *Are teacher and student behaviors appropriate to the objective?* This question really throws me because the concept formation lesson I described could not be used for all curriculum objectives. For instance, I can't imagine any way to use concept formation

to help my students practice the long division algorithm. It just doesn't fit. How do you decide whether or not a strategy fits a particular curriculum objective?

Selecting a Strategy to Fit a Particular Teaching Situation

Jean: Knowing how to select a strategy appropriate to a particular learning situation is critical. First, let's clarify the nature of our objectives. We can define five principal goals of education (Figure 1).

"Goals, strategies, learners, and objectives have styles. Each style implies a different set of relationships between the teacher, the learner, and the curriculum."

1. *Mastery*—development of a high level of competence in basic skills.

2. *Understanding*—development of the ability to use reason and higher-level intellectual and academic skills in content work.

3. *Synthesis*—development of the ability to create new and original work and apply intellectual and basic skills to new contexts.

4. *Involvement*—development of the ability to find relevance in learning and to move toward an "academic maturity"⁵ where sound decisions yield success in school.

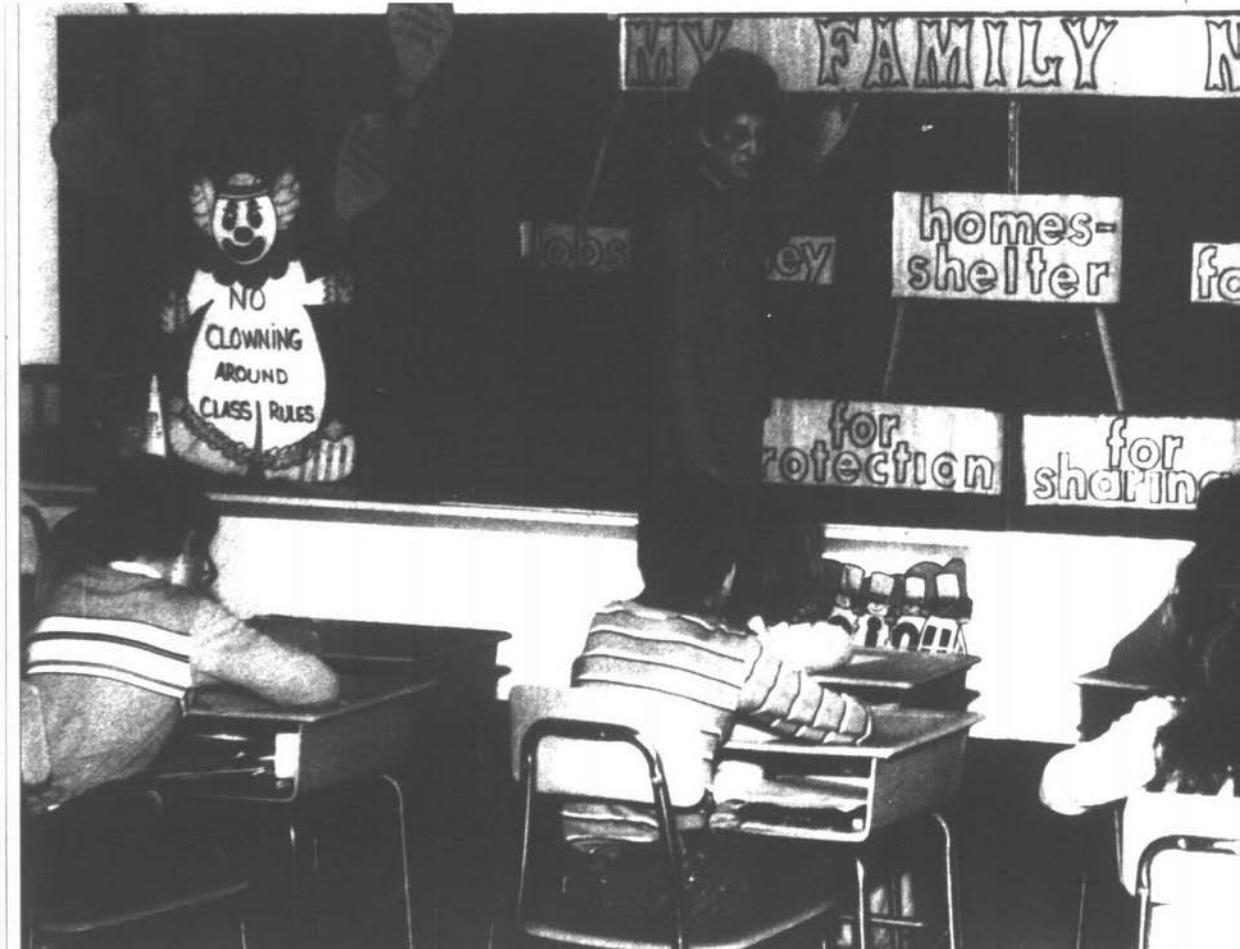
5. *Cultural Literacy*—knowledge of a body of culturally important information.⁶

Each of these goals is a family that embraces a set of teaching strategies, a set of thinking styles, and a set of

curriculum objectives. Goals, strategies, learners, and objectives have styles. Each style implies a different set of relationships between the teacher, the learner, and the curriculum. We get in trouble when we try to teach different contents to different kids in exactly the same way.

Mark: Wait a minute. Some things do remain the same. The elements of lesson design....

Jean: ... describe ways in which all examples of good teaching should be the same. Style and strategy, on the other hand, describe the ways in which examples of good teaching may and should differ. Let's be more specific.



The mastery goal tends to employ strategies involving *practice*. This style emphasizes thinking operations such as following directions, sequencing, matching, and rehearsing. These practice strategies work best with curriculum objectives that emphasize previously presented concrete skills.

The understanding goal calls for strategies eliciting the style of thinking necessary to *process* information into new forms. Processing involves thinking operations like comparing, contrasting, hypothesizing, and verifying. Process strategies work best with those objectives that emphasize understanding concepts and generalizations and the use of intellectual or academic skills such as interpretation of literature and the establishment of proof.

The synthesis goal calls for a *problem-solving* style of thinking. Here, as in understanding, one must go "beyond the information given"; the goal is to take action and validate existing cognitive structures. To achieve this, problem-solving strategies emphasize thinking operations like associating, generating, focusing, and forming and using metaphors.

The involvement goal requires a style of thinking that brings the learner to a personal association with knowledge so that he or she can make sound decisions. This style emphasizes thinking operations such as introspection, empathizing, evaluating, and decision making. These *personal* strategies work best with objectives that emphasize the development of self-concept and healthy social relationships.

The cultural literacy goal is associated with styles of thinking that help learners cope with the presentation of material. These *presentational* strategies emphasize receptive styles of thinking based primarily on the need to remember. They work best with content objectives requiring the learner to store and recall quantities of information."

When we neglect these differences, we fail to focus as clearly as we might on the nature of our objectives, the nature of our students, and the nature of the strategies most likely to get our ideas across. For instance, would anyone argue that using the elements of lesson design requires teaching phonics and the interpretation of Faulkner's "The Bear" in exactly the same way?

Carol: You're suggesting that we select strategies that match the styles of the content objectives we're teaching?

Jean: That's one important possibility, but thinking back on our discussion of learner readiness, I think we can identify another. When we introduce a new skill, a new body of information, a new problem-solving situation, or a new way of processing information, we should choose a strategy that matches either (1) the style of the content objective we are teaching, or (2) the style of thinking with which the learner is most comfortable.

Then, as we progress through our unit of study, it is appropriate and

important to use strategies in other goal areas in order to (1) expose different styles of learners to new styles of thinking, and (2) display the content from a variety of perspectives.

Carol: Then is there a hierarchy of strategies, thinking styles, and objectives?

Jean: No. Although some knowledge is necessary to do any sort of thinking, we almost always underestimate the value of students' experience as a platform from which we can commence any style of thinking and learning. And we almost always overestimate the distance between that experience and the knowledge we wish them to acquire. Practicing, processing, problem solving, and personalizing all can be means of acquiring and deepening knowledge.

Mark: This is very exciting. It opens up new worlds to me, and I think it will be helpful to my teachers as well. But I'm not willing to move in this direction unless we can build on the foundations we've already laid, and for me the cornerstone of that foundation is the elements of lesson design. Frankly, I don't see how to select strategies to fit within the lesson design.

Teaching Strategies, Thinking Styles, and the Elements of Lesson Design

Jean: I support your position and concern. It's one thing to shift priorities to address newly emerged or recognized needs (like the need to develop higher-order thinking). It's quite another to abandon hard-won insights and undeniably effective practices (like the principles of learning and the elements of effective lesson design). It makes no sense at all to go to the trouble to lay a foundation somewhere and then turn around and build your house somewhere else.

However, I see no conflict at all between the elements of lesson design and the correct use of a wide variety of thinking styles and teaching strategies.

Mark: Good. Show me how they fit together.

Jean: Let's review the elements of an effective lesson. First, its *objective* rests in a class by itself because so much else depends on it. Selection of



"By selecting one strategy over another, teachers emphasize one style of thinking over another."

the objective determines not only the content and the level of difficulty at which the lesson will be taught, but it may also determine the style and the strategy or strategies the teacher will employ. In considering an objective, therefore, the teacher is focusing simultaneously on all three critical variables of education: teaching strategy, learner readiness, and content.

When actually planning a lesson, a teacher employs six other elements* (Figure 2):

1. *Anticipatory set* is an introductory activity that helps learners recall prior knowledge on the topic at hand and focus it on the current topic.

2. *Input* provides learners with ideas, directions, and information.

3. *Modeling* shows learners concretely how to work with the input.

4. *Checking for understanding* is a questioning element that ensures that students comprehend what has been presented and modeled.

5. *Guided practice* is an action element in which students practice examples of the modeled behavior with careful guidance and active support from the teacher.

6. *Independent practice* requires students to practice the modeled behavior on their own.

Figure 2. The Elements of Lesson Design and Teaching Styles and Strategies: A Synthesis.

	<p>1. Select the Objective. Objectives come in all five styles, but they all point toward one goal: student independence.</p>		<p>4. Checking for Understanding. Processing and synthesis strategies permit us to go beyond mere checking for accuracy and into a realm where inferences, assumptions, and implications become clear.</p>
	<p>2. Anticipatory Set helps learners focus on the new objective. Since the idea of focusing is central, brief practice, process, or personal strategies work best here.</p>		<p>5. Guided Practice. Practice strategies are the obvious choice here. But a surprising number of personal strategies work well too.</p>
	<p>3. Input and Modeling. Here we are providing or extending information. Presentational and processing strategies work best here.</p>		<p>6. Independent Practice is possible once the student has been shown how independence can appear in all five goal areas.</p>

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Carol: Are the elements of lesson design a strategy?

Jean: That is what I call the "foundation question," and a great deal rides on its answer. If we answer yes, then Hunter's strategy is one among many, and we will be forced to choose. We will have to say that it belongs to one style or another and is appropriate to this set of objectives but not that set.

Most people who see the elements this way would call lesson design a mastery strategy. In making such a claim, they would point to its high applicability to basic skills work. They would also point to its apparent sequential structure and to the high level of teacher control over student behavior implied by the teacher's decisions involving choice of objective, input, modeling, and so on.

Viewed as a strategy, these elements may appear not to encourage student thinking as much as they could. There seems to be no place here for students to generate objectives or questions to verify or create their own understandings or to become a source of information or modeling for others. It is hard to imagine how a strategy that does not elicit and encourage student initiative at every stage could play a significant role in the development of understanding, synthesis, or involvement.

But lesson design is not a strategy. Hunter's frequent declarations on the flexibility of the elements—as well as the sheer diversity of the contents for which they can and have been employed—let us see the elements for what they really are: a model for *selecting strategies*. The model's purpose is a sixth goal that subsumes all five categories: the establishment of student independence. Viewed in this light, the elements of lesson design describe how teachers work with their students to move them from thinking dependence to thinking independence, from inability to ability, from reliance on authority to autonomy. In this case the elements constitute a thoroughly admirable model for teaching all sorts of thinking because they leave open to teachers the choice of what strategy they may use at any point in the model's development.⁹ This means teachers can employ a wide variety of strategies, establishing what they consider to be the proper fit of strategies to learner readiness and content objectives. By selecting one

strategy over another, teachers emphasize one style of thinking over another.

For instance, in the input phase a teacher could use either Ausubel's Advanced Organizer or Bruner's Concept Attainment. The Organizer models the process of establishing relationships in a content area, while Concept Attainment actually engages the students in formulating and testing personal hypotheses and connections. Mossston's Graduated Difficulty Strategy¹⁰ could be used as part of the anticipatory set to help students recall what they remember about a topic or as part of a guided practice to help them assess their knowledge and learn the value of evaluative thinking. Parnes and Treffinger's work in Creative Problem Solving can help extend and transfer prior learning into new realms, while our own Circle of Knowledge Strategy¹¹ can provide a unique way to involve the total group in checking for understanding. Finally, a social studies or science teacher could use the entire Lesson Design Model to teach students Taba's Concept Formation Strategy and then set them free to discover what they may about their subject. Their discoveries could be the input for the next day's lessons.

Seeing the elements of lesson design not as a strategy but as a model for choosing strategies saves us from denigrating either the strategies or the elements. Instead, it provides us with an invaluable tool for selecting and organizing our strategies, and for helping us see the rich variety of options open to a teacher at every phase of the learning process.

Mark: Suppose we want to shift in the direction you are pointing? How can we begin?

Jean: First, get training in both the elements of lesson design and a rich diversity of strategies.

Second, assess your school. Go into the classroom and talk to the teachers. Ask yourself, "Do they know the elements of lesson design?" "Do they use them?" "How rich and varied is their palette of strategies?" "What styles are well represented?" "What styles are neglected?"

Third, make sure your staff knows the elements before you introduce them to the strategies.

Fourth, introduce a few strategies at a time but make the strategies representative of all five styles.

Fifth, use both the elements and the strategies in your teacher conferences and faculty meetings.

Mark: Well, that's a beginning.

Jean: No, I think it's a little after the beginning. It's more like a first floor—the part of a house you construct after you've laid the foundation. □

⁹For further information on these and other strategies, see H. F. Silver, R. Hanson, and R. W. Strong, *Teaching Styles and Strategies* (Moorestown, NJ: Hanson Silver & Associates, 1982).

¹⁰David Ausubel, *The Psychology of Meaningful Verbal Learning* (New York: Grune and Stratton, 1963).

¹¹Jerome Bruner, Jacqueline Goodnow, and George A. Austin, *A Study of Thinking* (New York: Science Editions, Inc., 1967); and Bruce Joyce and Marsha Weil, *Models of Teaching* (Englewood Cliffs, NJ: Prentice Hall, 1972).

¹²Hilda Taba, *Teacher's Handbook for Elementary Social Studies* (Reading, Mass: Addison-Wesley Publishers, 1967).

¹³Ted Walsh, "Problem Solving and Academic Maturity" (unpublished paper, Watertown, N.Y., 1981).

¹⁴E. D. Hirsh, "Cultural Literacy and the Curriculum," keynote address to the Annual Statewide Staff Development Conference, California State Department of Education, Asilomar, Calif., January 1985.

¹⁵Walsh, ibid.

¹⁶Madeline Hunter, "Knowing, Teaching, and Supervising," in *Using What We Know About Teaching*, ed. Philip L. Hosford (Alexandria, Va.: Association for Supervision and Curriculum Development, 1984), pp. 169-192.

¹⁷We deliberately avoided using the word "sequence," since proper understanding of Hunter's model includes the recognition that particular elements may be repeated or deleted in accordance with the teacher's judgment based on the objective he or she has chosen and his or her monitoring of student progress toward that objective. This sort of flexibility makes the use of the word "sequence" highly misleading.

¹⁸Muska Mosston, *Teaching from Command to Discovery* (Belmont, Calif.: Wadsworth Publishing Company, 1972).

¹⁹R. W. Strong, H. F. Silver, and R. Hanson, *Teaching for Understanding* (Moorestown, NJ: Hanson Silver Strong and Associates, 1985).

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