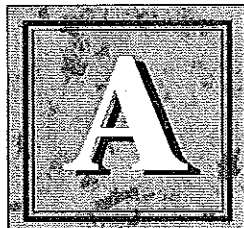


# CHAPTER 4 LEARNING STRATEGY INSTRUCTION IN CALLA

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CENTRAL COMPONENT OF CALLA is the integration of learning strategies with instruction in academic language and content. The basic premise is that students will learn academic language and content more effectively by using learning strategies. That is, students who use strategic approaches to learning will comprehend spoken and written language more effectively, learn new information with greater facility, and be able to retain and use their second language better than students who do not use learning strategies. Accompanying the use of learning strategies, students gain an important perspective on their own learning, see the relationship between the strategies they use and their own learning effectiveness, plan for and reflect on their learning, and gain greater autonomy as a learner. Because learning strategies can be taught, the teacher has an important role in conveying to students the importance of using strategies, defining various strategies and their use with academic tasks, and supporting the students in their efforts to become more strategic, independent, and self-regulated.

## *Why Learning Strategies are Important*

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There are two major reasons why we integrate learning strategies into the instruction of academic language and content. The first is the theoretical consistency of learning strategies with the cognitive view of learning which underlies CALLA. The second is the impressive amount of research that supports using learning strategies with academic language and content information.

### **THEORETICAL BACKGROUND**

The cognitive model of learning indicates that learning is an active, dynamic process in which learners select information from their environment, organize the information, relate it to what they already know, retain what they consider to be important, use the information in appropriate contexts, and reflect on the success of their learning efforts.<sup>1</sup>

This type of learning is often conscious and deliberate, although individuals who are highly accustomed to learning in this manner may do so rapidly and without a great deal of immediate awareness of their thoughts. As we noted in Chapter 1, the cognitive model specifies how information is stored in memory and how new information is learned. What is most significant is that the model is able to describe the selection, organization, and other mechanisms that constitute active and dynamic learning processes as well as to indicate why learning sometimes occurs without awareness. Furthermore, the model is able to handle many of the mechanisms involved in second language acquisition and in content learning.

The description of learning strategies hinges on the distinction between declarative and procedural knowledge. Once learned, learning strategies operate just like procedural knowledge. Individuals can have declarative knowledge about a strategy

but not be able to apply it effectively without considerable deliberation. Through repeated efforts to apply the strategy with various learning materials, however, the individual can gradually "proceduralize" or learn to use the strategy automatically so that it functions rapidly and without errors with specific tasks. Strategy applications are particularly aided by taking the "high road" to learning by recognizing parallels between new tasks and more familiar tasks on which the strategy has been applied successfully, thereby facilitating transfer. Thus, in the cognitive view of learning, strategies have a prominent role because they represent the dynamic mechanisms underlying learning. Furthermore, learning strategies are totally consistent with the cognitive view and can be described within the cognitive model.

### RESEARCH ON LEARNING STRATEGY EFFECTIVENESS

To better understand the mental processes involved in learning, cognitive researchers analyze and describe the performance of expert learners on specific types of tasks and contrast it with how novices approach the same learning activities. We obtain information about strategies by asking individuals to report on the "things they do that help them learn" both retrospectively and concurrently while working on specific tasks.<sup>2</sup> For example, in a content area, individuals might be presented with a math problem and be asked to describe their thoughts as they anticipate and solve the problem. Similarly, they might be presented with a reading passage on which, presumably, they will receive some comprehension questions and be asked to indicate what they do before, during, and after they read to better understand and remember the information.

An identical approach to collecting information on strategy awareness and applications is used with individuals learning a second language. However, in second language acquisition, the questions focus on listening, speaking, reading, and writing in the second language. Students operating at the beginning level of proficiency in the second language may be asked these questions in their native language. Findings from these studies indicate that individuals nominated by their teachers as effective second language learners tend to be more aware of their thought processes, use a richer variety of strategies, and use more appropriate strategies with learning tasks.<sup>3</sup>

Another approach taken in cognitive research on learning strategies is to instruct individuals on the importance and use of specific strategies with various tasks, provide them with opportunities to practice the strategies, and determine whether or not their learning is improved. This research approach has been tried with a number of different kinds of first language tasks, including vocabulary, reading, math, science, and problem solving<sup>4</sup> and with certain second language tasks, including listening and speaking.<sup>5</sup> Results indicate that instruction in learning strategies is effective in producing increased use of strategies and in enhancing learning, and that transfer of strategies can be developed provided that there is ample training for metacognitive awareness of task characteristics and demands.<sup>6</sup> However, there is far less supportive research for learning strategy instruction in second language acquisition than with native language skills in English. Nevertheless, there is little reason to suspect that strategy training would not be as broadly effective with second language tasks as it has been with native language skills. We have accumulated evidence supporting learning strategy instruction with CALLA for mathematics word problems,<sup>7</sup> and will have future studies of CALLA and strategy instruction in science.

Based on the theory and research related to learning strategies, there are four basic propositions that underlie the use of learning strategies in CALLA.

- **Active learners are better learners.** Students who organize and synthesize new information and actively relate it to existing knowledge should have more cognitive linkages to assist comprehension and recall than students who approach each new task by simple rote repetition.

- **Strategies can be learned.** Students who are taught to use strategies and who are given positive experiences where they are applied will learn more effectively than students who have had no experience with learning strategies.
- **Academic language learning is more effective with learning strategies.** Learning academic language in content areas among ESL students should follow the same principles that govern reading and problem solving among native speakers of English.
- **Learning strategies transfer to new tasks.** Learning strategies will be used by students on new tasks that are similar to the learning activities on which they were initially instructed to use learning strategies. Transfer will be facilitated with metacognitive training.

While extensive research evidence supports the first two propositions, and evidence is accumulating for the third,<sup>8</sup> studies are only recently beginning to evolve supporting the fourth proposition. The fourth proposition is based in part on our own and others' observation that strategies for language and content learning are not distinct<sup>9</sup> and in part on our positive experiences in training ESL students to use learning strategies on integrative language tasks.<sup>10</sup> We have made learning strategies instruction a pervasive part of CALLA both to encourage strategy use while the students are still in CALLA, and to encourage strategy use when the students exit to grade-level classes.

### Why Learning Strategies are Important

- ❖ Strategies represent the dynamic processes underlying learning.
- ❖ Active learners are better learners.
- ❖ Strategies can be learned.
- ❖ Academic language learning is more effective with learning strategies.
- ❖ Learning strategies transfer to new tasks.

## Types of Learning Strategies

Learning strategies are defined as thoughts or activities that assist in enhancing learning outcomes.<sup>11</sup> Strategies by definition are probably performed with awareness, or else they would not be strategic, although the same mental operations can be performed without awareness once they are proceduralized and have the same beneficial results with learning.

Three broad categories of learning strategies have been proposed in the cognitive literature<sup>12</sup> and in our own research.<sup>13</sup> These types of learning strategies are based in part on theory and in part on the observation that students report using what seem to be executive skills with learning tasks while also using strategies that apply directly to the learning activities. The three types of strategies are as follows:

- **Metacognitive Strategies**—planning for learning, monitoring one's own comprehension and production, and evaluating how well one has achieved a learning objective;

- **Cognitive Strategies**—manipulating the material to be learned mentally (as in making images or elaborating) or physically (as in grouping items to be learned or taking notes); and
- **Social/Affective Strategies**—either interacting with another person in order to assist learning, as in cooperative learning and asking questions for clarification, or using affective control to assist learning tasks.

The application of strategies to learning activities is assisted by what is referred to as metacognitive knowledge,<sup>14</sup> or knowledge of the task characteristics, of one's experiences with similar tasks, and of the strategies one can deploy in learning new information on the task. Metacognitive knowledge involves awareness and understanding of one's own mental processes and approach to learning. This is the basic process that enables using the "high road" to transfer described above.

### **METACOGNITIVE STRATEGIES**

Metacognitive strategies are similar to executive processes that enable one to anticipate or plan for a task, determine how successfully the plan is being executed, and then evaluate the success of the learning and the plan after learning activities have been completed. Specific examples of metacognitive strategies are shown in Table 4.1 along with various types of cognitive and social/affective strategies. The metacognitive strategies include planning, monitoring, and evaluating learning activities. Individuals can plan for a learning activity by using the strategy *directed attention*, or encouraging themselves to attend to the learning task while ignoring distractions, and *selective attention*, or focusing on specific key words, phrases, or types of information in the learning activity. In a writing or speaking activity, a learner can use *organizational planning* by creating an outline or structure that will be followed in a communication. While the learning activity transpires, individuals can use *self-monitoring* to determine whether or not the learning is fulfilling the original learning goals or if they are attending satisfactorily to the task at hand. The usual procedure for doing this is with self-questions asked intermittently about learning progress. At the conclusion of the learning activity, individuals can use *self-evaluation* by checking on their success in accomplishing targets for learning. Metacognitive strategies tend to be independent of specific learning tasks and to have broad applications.

### **COGNITIVE STRATEGIES**

The numerous cognitive strategies shown in Table 4.1 fall into three broad categories: rehearsal, organization, and elaboration strategies.<sup>15</sup> The latter category, elaboration, sometimes refers to a specific strategy, linking new information to prior knowledge, and sometimes is used as a generic category for other strategies, such as *imagery*, *summarization*, *inferencing*, *transfer*, and *deduction*. Unlike metacognitive strategies, which tend to have broad applications, cognitive strategies are often linked to individual tasks. For example, *classification* or *grouping* is often used in learning vocabulary or for organizing concepts (as in science), while *note-taking* and *summarizing* are more often used in listening or reading comprehension. *Inferencing* may be used in learning vocabulary or in reading, since the learner can use intrinsic cues for meaning (e.g., word endings) or extrinsic cues such as the context of meaning in which a word occurs. *Elaboration* of prior knowledge is a cognitive strategy which has applications to all types of content learning, and to listening, speaking, reading, and writing.

**Table 4.1**  
**LEARNING STRATEGIES IN THE CLASSROOM**

**Metacognitive Strategies**

STRATEGY NAME	STRATEGY DESCRIPTION	STRATEGY DEFINITION
<b>Planning</b>		
Advance Organization	Preview Skim Gist	Previewing the main ideas and concepts of a text; identifying the organizing principle.
Organizational Planning	Plan what to do	Planning how to accomplish the learning task; planning the parts and sequence of ideas to express.
Selective Attention	Listen or read selectively Scan Find specific information	Attending to key words, phrases, ideas, linguistic markers, types of information.
Self-management	Plan when, where, and how to study	Seeking or arranging the conditions that help one learn.
<b>Monitoring</b>		
Monitoring Comprehension	Think while listening Think while reading	Checking one's comprehension during listening or reading.
Monitoring Production	Think while speaking Think while writing	Checking one's oral or written production while it is taking place.
<b>Evaluating</b>		
Self-assessment	Check back Keep a learning log Reflect on what you learned	Judging how well one has accomplished a learning task.

**Cognitive Strategies**

STRATEGY NAME	STRATEGY DESCRIPTION	STRATEGY DEFINITION
Resourcing	Use reference materials	Using reference materials such as dictionaries, encyclopedias, or textbooks.
Grouping	Classify Construct graphic organizers	Classifying words, terminology, quantities, or concepts according to their attributes.
Note-taking	Take notes on idea maps, T-lists, etc.	Writing down key words and concepts in abbreviated verbal, graphic, or numerical form.
Elaboration of Prior Knowledge	Use what you know Use background knowledge Make analogies	Relating new to known information and making personal associations.

Table 4.1 (continued)		
Cognitive Strategies (continued)		
STRATEGY NAME	STRATEGY DESCRIPTION	STRATEGY DEFINITION
Summarizing	Say or write the main idea	Making a mental, oral, or written summary of information gained from listening or reading.
Deduction/Induction	Use a rule/Make a rule	Applying or figuring out rules to understand a concept or complete a learning task.
Imagery	Visualize Make a picture	Using mental or real pictures to learn new information or solve a problem.
Auditory Representation	Use your mental tape recorder Hear it again	Replaying mentally a word, phrase, or piece of information.
Making Inferences	Use context clues Guess from context Predict	Using information in the text to guess meanings of new items or predict upcoming information.
Social / Affective Strategies		
STRATEGY NAME	STRATEGY DESCRIPTION	STRATEGY DEFINITION
Questioning for Clarification	Ask questions	Getting additional explanation or verification from a teacher or other expert.
Cooperation	Cooperate Work with classmates Coach each other	Working with peers to complete a task, pool information, solve a problem, get feedback.
Self-Talk	Think positive!	Reducing anxiety by improving one's sense of competence.

### SOCIAL/AFFECTIVE STRATEGIES

Social/affective strategies are particularly important in second language acquisition because language is so heavily involved in cooperation and asking questions for clarification. Students learning specific language functions or structures can practice these in cooperative learning settings and obtain feedback from other students on the effectiveness and coherence of efforts to communicate orally or in writing. *Asking questions for clarification* is particularly critical for ESL students because they will so often need to exercise this skill in their grade-level classrooms. Another social/affective strategy, *self-talk*, is useful for students who have any degree of anxiety about learning activities. In second language acquisition, as suggested by the well-known affective filter,<sup>16</sup> many individuals find that anxiety detracts from the attainment of learning objectives. In using self-talk, students reassure themselves through inner speech that they will be able to perform successfully on the task at hand. Their self-talk will be more convincing if they have prior successful experiences with tasks which are similar to the ones they are now encountering and for

which they have developed effective learning strategies. *Cooperative learning* and *asking questions for clarification* tend to be useful regardless of the specific learning task, while *self-talk* may work best with tasks on which the student has had some prior experience.

In sum, the three types of learning strategies in combination with metacognitive knowledge can provide learners with a powerful array of techniques that can be used to assist learning. Now we address what teachers can do, first to select strategies and then to teach strategies to students.

### Types of Learning Strategies

- ❖ Metacognitive Strategies: used in planning for learning, self-monitoring, and evaluating achievement.
- ❖ Metacognitive Knowledge: understanding one's own learning processes, the nature of the learning task, and the strategies that should be effective.
- ❖ Cognitive Strategies: manipulating the material to be learned through rehearsal, organization, or elaboration.
- ❖ Social/Affective Strategies: interacting with others for learning or using affective control for learning.

### How to Select Learning Strategies

Having defined three broad classes of strategies, we now go on to indicate how teachers select one or more strategies to include in instruction. The selection process requires familiarity with the curriculum because strategies that are included in instruction must be valid for the types of activities students work on in classrooms. This will give the students a sense that the strategies are current and are directly linked to important classroom tasks and experiences. The steps in strategy selection are intended to produce a small set of strategies that are highly appealing to students, are teachable, and will readily assist learning.

#### THE CURRICULUM DETERMINES THE STRATEGY

The first general rule that governs strategy selection is that the strategies are determined by the nature of the instructional task. That is, teachers begin with the language and content goals, objectives, and tasks and then decide on the types of strategies that are appropriate and would be most effective. Basically, the language, content, and task drive the strategy selection. The language and content are often determined by local curriculum guides or frameworks which describe, depending on their specificity, the goals, objectives, and even representative lesson activities. The strategies selected should be compatible with these goals and objectives and with the types of activities and instructional procedures that are recommended in these documents. Not only should the teacher see the strategies as being useful for the local curriculum, but the students should see the strategies as being useful for important classroom activities. The strategies should therefore be seen as part of and essential to the local curriculum.

### **START WITH A SMALL NUMBER OF STRATEGIES**

A second general rule is that teachers should start with a small number of strategies (one or two) for students to learn rather than attempt to introduce a lot of strategies all at once. Some researchers recommend starting with a single strategy, only expanding to others when the one strategy has been thoroughly learned.<sup>17</sup> In our experience there are some strategies that are so supportive of each other that they can be introduced simultaneously, e.g., *activating prior knowledge* and *inferencing*. However, even strategies that are reasonably easy to use or intuitively obvious to teachers will not be so obvious to all students, nor will the ways in which the strategy can be applied to important classroom tasks. Teachers should permit students to feel success with a small number of strategies and then move on to other strategies one at a time. Students will look forward to the next strategy when the one used previously has been so useful. At some point the students can be asked to use strategy combinations or to select a strategy from their repertoire which they find to be most useful with a particular learning activity. To begin with a highly complex strategy or too many strategies for students to learn easily could make students feel that strategies are too difficult to be worth the effort required to learn them.

### **USE TASKS OF MODERATE DIFFICULTY**

A related rule is that the task with which the strategy is used should not be too difficult. If the task is exceedingly difficult, students will not have an opportunity to experience success early and will believe that the strategy is not useful. For example, a reading activity should be manageable and contain at least some material students are already familiar with rather than contain a large amount of new vocabulary with difficult syntax. In our experience, when materials are exceedingly difficult, even the best of strategies cannot overcome the density of the materials and students can too easily become frustrated.<sup>18</sup>

### **CHOOSE STRATEGIES WITH STRONG EMPIRICAL SUPPORT**

Another important guideline in strategy selection is to choose strategies for which there is strong empirical support.<sup>19</sup> We do not believe that it is appropriate to begin otherwise because the teacher would take risks that might not pay off in student motivation and interest. Ideally, the research support for the strategies the teacher selects should be with the type of students to whom the strategy instruction will be applied. This is not always possible with language minority students, since the research has been limited. Nevertheless, we believe that teachers can select strategies for which there has been strong empirical support with native English-speaking students and tailor the strategy to students who are learning English.

### **USE STRATEGIES THAT APPLY TO DIFFERENT CONTENT DOMAINS**

A fifth recommendation is to select a strategy that will prove useful across different content domains.<sup>20</sup> If the strategy is useful for reading comprehension in literature, social studies, and science, students will be more likely to adopt the strategy as a regular part of their repertoire. The reading comprehension strategies mentioned above—*inferring meaning from context*, *elaboration*, and *summarizing*—exemplify strategies that will be useful across content domains. Students may need fairly extensive instructional support to recognize the usefulness of a strategy across different content areas. *Scaffolding* or providing strong support early when the strategy is intro-



duced and withdrawing support over time is an essential component of a teacher's repertoire for strategy instruction.

In sum, strategy selection requires teachers to use their familiarity with the local curriculum in selecting strategies that can be closely interwoven with the curriculum. The strategies should not be seen by students as something apart from the curriculum but as a natural part of learning in school. They should see the use of strategies as the primary way one participates in learning activities in the classroom and while studying at home. They should also see strategies as something one talks about in the classroom when discussing learning tasks with other students, teachers, and others such as their parents.

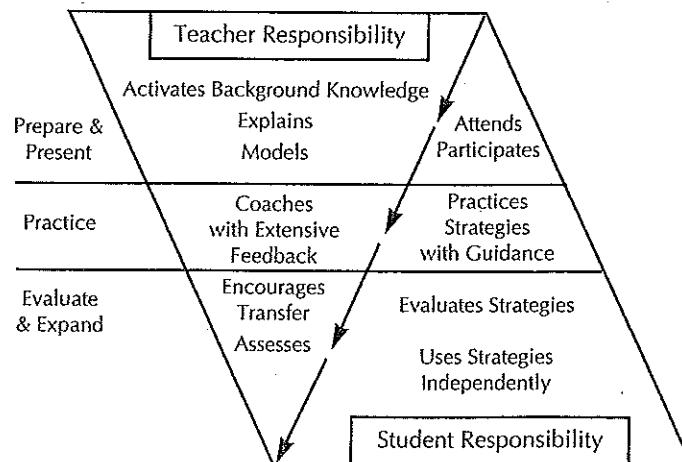
### How to Select Learning Strategies

- ❖ The curriculum determines the strategy.
- ❖ Start with a small number of strategies.
- ❖ Use tasks of moderate difficulty.
- ❖ Use strategies with strong empirical support.
- ❖ Use strategies that apply to different content domains.

### How to Teach Learning Strategies

The most important point to remember about teaching learning strategies is to use proven methods for strategy instruction.<sup>21</sup> The techniques we will describe have been researched extensively with students and have been successful in introducing students to strategies, encouraging their use, and sustaining use and transfer of the strategies over time. There is no reason to use less than the most effective strategy teaching procedures when highly effective ways to introduce strategies are known. We recommend a five-step procedure for strategy instruction that is organized consistent with the five phases of the CALLA instructional sequence: Preparation, Presentation, Practice, Evaluation, and Expansion.

Framework for Strategies Instruction<sup>22</sup>



## PREPARATION

The purpose of the Preparation phase is to develop students' awareness that their prior knowledge can be applied to the topic of the unit. Because the focus of these lessons is on learning strategies, that means developing students' awareness of their current strategies, the special techniques that help them learn, and their belief in whether the strategies they currently use are important. It means determining students' beliefs about learning and whether they believe that learning occurs as a result of effort, native intelligence, luck, or the systematic application of strategic techniques. It is during the Preparation phase that teachers encourage metacognitive knowledge, or the awareness of activities which assist in learning a language, the kinds of tasks that are involved, and the importance of having a strategic repertoire to assist in learning. Students may also understand that there is more than one way to learn, and that part of their task as a learner is to determine the learning approach that best suits them individually. They may understand and appreciate strategies by knowing that effective learning results from selection and application of effective strategies, the things that more able students do to help them learn.

There are a number of things teachers can do during the Preparation phase. One activity that will assist students to understand their own strategies and the importance of a strategic approach to learning is to organize students into small groups and ask them how they studied for or learned information in their native language. If the students have had at least some experience in American schools, they can be asked to identify how they learn information in English. Students can compare their strategic approaches in the two languages, determining if there are similarities in the techniques or strategies they use in their native language and in learning English. Each group should prepare a brief oral report to discuss their strategies with the class. Teachers can vary the assignment for each group, suggesting that one group think about the strategies for vocabulary learning, a second group think about strategies that help with following directions, reading a story, reading for content information, writing a description of a personal experience, etc. The tasks should be based on typical activities students have experienced in the classroom. Other possible classroom tasks might include understanding and recalling the main idea and supporting details of a story read aloud to them, asking questions, answering questions, and explaining information. Teachers may wish to include non-classroom tasks as well, depending on the age of the students, such as answering the telephone, initiating a social conversation, and applying for a job. This procedure is very similar to the approach we have used in prior research and which we found very successful in eliciting a variety of different kinds of strategies.<sup>23</sup>

Following the small group discussions, the teacher can direct a full-class discussion of the different strategies students in the various groups report. Teachers should write the strategies students report on the chalkboard, using the exact terms they use to describe the strategies. The discussion should focus on differences in strategies depending on the task and the variation in strategies preferred by different students for the each task. Students can try to evaluate whether some strategies seem preferable to others. If a particular strategy will be introduced during the Presentation phase, the teacher can highlight that strategy in the discussion or probe for whether or not anyone uses that strategy.

A second approach is for the teacher to model "thinking aloud" to identify one's own strategies. The purpose of modeling at this point is to increase student awareness of the strategies they currently use by giving them a tool to identify additional strategies. The teacher can assign small groups a specific language learning task and give them 10-15 minutes to work on the task as a group. The task could entail following directions, reading and understanding a passage, solving a problem, etc. After the students have tried to work on the task for a while, the teacher can model "thinking aloud" while working on the task. In modeling thinking aloud, teachers describe their own metacognitive knowledge of the task, i.e., what the task calls on

them to do, of similar tasks they have experienced in the past, and of the strategies that should be useful in learning. Teachers then describe aloud what they are doing as they work on this task themselves, what step-by-step procedure they are following in learning, and how they are determining their success as a learner. The teacher then encourages students in small groups to take turns "thinking aloud" as they work on the task. This type of think aloud activity is particularly useful when students have difficulty in understanding what strategies are and in recalling strategies they have used in the past. As with the first approach, if a particular strategy will be introduced during the Presentation phase, the teacher can highlight that strategy during the discussion, or prompt for that strategy during the discussion.

The effectiveness of small group discussions and teacher modeling as ways to introduce strategies may vary depending on the classroom characteristics. For example, in an ESL classroom that is exclusively language oriented, teachers might model thinking aloud with language-learning tasks independent of content information. In a content ESL or CALLA classroom, teachers might ask students to think aloud while solving a math word problem, while setting up and reporting on a science problem, or while describing the best approach for performing a social studies project. The outcome of these activities should be a heightened awareness by the students of the strategies they currently use and in the connection between strategic effort and learning.

With students who are at the beginning level of English proficiency, teachers may need to teach students special vocabulary that will assist them in discussing their strategies. For example, words like "think," "strategy," and "learn" may require native language translation or the assistance of a peer who is relatively proficient in both languages. The effort to give priority to these vocabulary words in instruction will be well compensated as students begin to discuss more effective approaches to learning.

## PRESENTATION

In the Presentation phase, the teacher uses explicit instruction to teach a particular learning strategy and in providing guidance on the use of the strategy. In teaching, the teacher explicitly names the strategy to be learned, indicates how the strategy is used with a specific task, and tells why the strategy is important for learning. This type of instruction increases the students' metacognitive awareness of the task requirements and of the connection between strategy use and learning.

The teacher can begin by refreshing the students' memories about the discussions of strategies which took place during the Preparation phase. The teacher then suggests a name for the strategy. Having a name for the strategy enables the teacher and students to communicate about learning processes for activities in the classroom. The teacher can use the technical name for the strategy that is provided in Table 4.1 if possible, or use a name the students have devised and feel comfortable with.

After having agreed on a name for the strategy, the teacher describes how the strategy is used with specific classroom learning activities. The description should be as complete as possible, identifying each step required to use the strategy, including recognizing why the strategy is appropriate for the task or materials being used. Teacher modeling of the strategy during the Presentation phase is an effective way to demonstrate to students how the strategy can be used. Teachers should describe use of the strategy with more than one example or activity so students see that the strategy is not limited to one specific task. Teachers might caution students that they may need to practice the strategy for a while before it begins to feel comfortable to them.

**PRACTICE**

The teacher's role in the Practice phase differs depending on the amount of experience students have had with the strategy. Early on in learning a strategy, teachers provide more guidance in strategy use than they do as students become more adept at using a strategy. Scaffolding is a process in which more extensive instructional supports are provided early in learning and gradually withdrawn as the students gain more skill and independence.<sup>24</sup> The teacher initially provides sufficient instructional supports to ensure that the students are learning to use the strategy effectively. For example, in learning to use a *T-List* for note-taking, students often require extensive information about how to identify a main idea, where to place these on the T-List, and how to identify or link supporting details to main ideas. Teachers can provide students with a nearly-completed T-List that has occasional key words missing, such as a specific main idea or a particular detail. Later, as students have gained more skill in using a T-List, teachers can begin to eliminate the word cues for the main ideas or details, until eventually students are presented with a blank sheet of paper on which they will draw their own T-List.

Teachers can provide students with a partially completed T-List

### The Eskimos


**LISTENING AND TAKING NOTES**


Look at the *T-List* below. A *T-List* helps you take notes on information you hear or read.

On a *T-List*, the main ideas are on the left; | the details or examples are on the right.

This *T-List* is about the Eskimos. The main ideas on the left are already complete. You are going to listen to some information about the Eskimos.

- Listen carefully and complete the details on the right.
- When you have finished, read all the information silently.



MAIN IDEAS	DETAILS AND EXAMPLES
<p>A. Early Eskimos crossed land bridge from Asia to America thousands of years ago.</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>B. Eskimos learned to find food in cold Arctic region.</p>	<p>1. Early Eskimos were last group of Asian _____ to cross land bridge.</p> <p>2. Eskimos did not _____ south.</p> <p>3. Today Eskimos live in North American polar regions of _____ and _____.</p> <p>1. Eskimos hunted sea animals such as _____ and _____.</p> <p>2. Hunted large _____ animals such as caribou and polar bears.</p>

In the Practice phase, students are given either individual or group assignments in which they have opportunities to use and apply a strategy. The assignments should resemble the type of task on which the strategy was modeled by the teacher or with which the strategy was described in the Presentation phase. If students work independently in applying a strategy, they should be given an opportunity afterwards to discuss their use of the strategy in small groups. If they have worked from the onset in small groups, they should be encouraged to report their thinking and reasoning processes aloud for others in the group to hear. One of the keys to gaining skill in strategy use and in transferring strategies to a wide variety of materials is verbalization and discussion of the strategy and its applications with peers.

## EVALUATION

In the Evaluation phase, students reflect on their strategy use and appraise their success in using it as well as the contribution the strategy makes to their learning. Essentially, students are being asked to plan for, monitor, and evaluate their strategy applications. Teachers can ask students to write down the strategies they used during an activity or classroom assignment, indicate how the strategy worked, and note any changes in the strategies from the way in which they were originally described in class. The teacher then guides a full class discussion of the strategies that seemed most useful for the assignment. Students can keep dialogue journals about strategy use and share these with the teacher. Students comment on their success in using the strategy, what difficulties they encountered, and how they overcame them. The dialogue journals can be maintained throughout the school year. Students might compare their own performance on a task completed without using learning strategies and a similar task in which they applied strategies. Students can also use a checklist to indicate strategies they have used with different materials.

One of the realities of strategy instruction is that not all strategies will be equally useful for all students. Students differ markedly in their approaches to learning and can be expected to have strong preferences in the types of strategies they like to use. Teachers should encourage students to collect a repertoire of strategies they can use with different types of materials or classroom activities and select from the repertoire in order to increase their own learning. Teachers should not force students to use one strategy or another, but encourage them to build their repertoire so they will increase their tools for learning. On the other hand, teachers should explore how fully students have examined strategy applications when they decline to use any of the strategy approaches.

## EXPANSION

In the Expansion phase, teachers apply the strategies to materials that were not part of the original classroom examples or instruction. Teachers can give students reminders to use a strategy that was part of an earlier Presentation phase, providing scaffolding prompts as needed, and encourage students to try the strategies with materials they are using in other classes. Teachers can encourage students to try different strategies and compare them for effectiveness. For example, to assist reading comprehension, students can be encouraged to use an *Idea Map* with some materials and then try using a T-List to see which they prefer. Thus students not only evaluate the effectiveness of strategy use but can do so by comparing one strategy with another. Students can also bring examples for discussion of some of their strategy applications in other classes. The most useful instructional outcome of these discussions can be guidelines for students concerning where and when to use individual strategies. Perhaps the most important individual outcome for students will be automatic and skilled use of strategies with a wide variety of academic tasks and the knowledge base to use them effectively.

**Table 4.2**

## **HOW TO TEACH LEARNING STRATEGIES**

### **Preparation**

Develop students' metacognitive awareness and self-knowledge through activities such as:

- Discussions about strategies students already use for specific tasks;
- Small group interviews in which students describe and share their special techniques for completing a task successfully;
- Learning strategy questionnaires in which students indicate the frequency with which they use particular strategies for particular tasks; and
- Individual think-aloud interviews in which the student works on a task and describes his/her thoughts.

### **Presentation**

Teach the strategy explicitly by:

- Modeling how you use the strategy with a specific academic task by thinking aloud as you work through a task (e.g., reading a text or writing a paragraph);
- Giving the strategy a name and referring to it consistently by that name;
- Explaining to students how the strategy will help them learn the material; and
- Describing when, how, and for what kinds of tasks they can use the strategy.

### **Practice**

Provide many opportunities for strategy practice through activities such as:

- Cooperative Learning
- Reciprocal Teaching
- Hands-on science experiments
- Mathematics word problems
- Research projects
- Developing oral and written reports
- Analyzing literature
- Process writing

### **Evaluation**

Develop students' metacognitive awareness of which strategies work for them—and why—through self-evaluation activities such as:

- Debriefing discussions after using strategies;
- Learning logs or journals in which students describe and evaluate their strategy use;
- Comparing their own performance on a task completed without using learning strategies and a similar task in which they applied strategies;
- Checklists of their degree of confidence in using specific strategies;
- Self-efficacy questionnaires about their degree of confidence in completing specific academic tasks; and
- Self-reports telling when they use or do not use a strategy, and why.

### **Expansion**

Provide for transfer of strategies to new tasks through activities such as:

- Scaffolding, in which reminders to use a strategy are gradually diminished;
- Praise for independent use of a strategy;
- Self-report in which students bring tasks to class on which they have successfully transferred a strategy;
- Thinking skills discussions in which students brainstorm possible uses for strategies they are learning;
- Follow-up activities in which students apply the strategies to new tasks and contexts;
- Analysis and discussion of strategies individual students find effective for particular tasks.

Table 4.2 is an outline of suggestions for teaching learning strategies. The purpose of these suggestions is to illustrate how teachers can help their students identify their current learning strategies, gain information about additional learning strategies with which they may be unfamiliar, practice new strategies, and decide which strategies work best for them and how they can use these strategies in additional contexts.

### How to Teach Learning Strategies

- ❖ Preparation: Develop students' awareness through a variety of activities.
- ❖ Presentation: Teach the strategy explicitly.
- ❖ Practice: Provide opportunities for practicing the strategy in varied contexts.
- ❖ Evaluation: Teach students to evaluate their own strategy use.
- ❖ Expansion: Encourage students to apply the strategies in other learning areas.

## Using Learning Strategies for Motivation

Student motivation for school learning is the result of their *expectations* for success on academic tasks, the *value* they assign to learning, and their attribution of responsibility for successful performance.<sup>26</sup> These factors determine the amount of effort students are willing to expend on learning activities, and how long they will persist in attempting to learn new information. Each of these factors is linked to personal experiences which act to influence a student's overall motivation for school learning. Generally, students who have more "skill" in performing academic tasks can be expected to have more "will" that will lead them to expand their involvement in learning.<sup>27</sup>

### EXPECTATIONS OF SUCCESS

Student expectations for success or failure in school develop over years of daily exposure to various types of instruction, teachers, learning conditions, environments, and materials. Students' experiences in either succeeding or failing in school often generalize to specific types of materials and content areas. For example, students often note that they have "an ear" for languages, "can't do math" or "can't remember history." Other students comment that they like areas "that they are good at." These expectations are deeply grounded in experience and influence every future encounter with instructional content. They are one of the major factors determining motivation and the effort students are willing to devote to learning. Teachers can support students' expectations for success gradually by presenting assignments that build on familiar knowledge, are scaffolded through manageable levels of conceptual or linguistic difficulty, and are accompanied by strategy instruction to facilitate success.

## VALUE OF TASK

The value students give to specific content information is another major influence on motivation. Two possible sources of value are intrinsic interest and applicability. Educators always strive to ensure that new learning has intrinsic interest to students, sometimes by using authentic literature, by highlighting science or social studies activities that might have interest to students, and by selecting content that is believed to have intrinsic interest or cultural relevance. Educators also strive to ensure that goals and instructional activities in schools are authentic in recognition of the relationship between value and motivation. Authentic materials include content that has value in students' lives, that has parallels with previous experience, that can be immediately applied to new experiences, and that is related to other information they are learning. Material whose sole justification is to prepare for next year's courses or to satisfy a requirement in the curriculum almost by definition would have less value to students. As a result, one of the major issues faced by educators is to ensure that instructional content is valued by students.

Many ESL students view the curriculum in grade-level classes as the "real" curriculum in school and devalue learning language while they must wait to learn important content. This is one reason why we believe in the importance of combining content area instruction with instructional methods for English as a second language, in that it appeals to students' values for school learning.

## ATTRIBUTION OF RESPONSIBILITY

Students attribute success or failure in school to a variety of factors including natural ability, effort, luck, personal influences, and—perhaps—skill as a learner. For the most part, however, students seem to think that learning results from natural ability and luck, with a touch of personal influence such as an exceptionally good (or not so good) teacher. Far less frequently do students indicate that success at school tasks results from skill as a learner. Good students succeed, they believe, because of their natural ability. As with expectations for their own success or failure, students' beliefs in this area have evolved over a long time period, are highly durable, and are resistant to change.

One of the goals of strategy instruction is to alter students' beliefs about themselves by teaching them that failures can be attributed to lack of effective strategies rather than lack of ability. Strategy instruction is also designed to provide students with a continuing string of successes so that they come to expect success on school tasks rather than anticipate failure with every new effort. Because expectation and motivation are so closely related, student performance should be monitored closely, and students should be given the means to monitor and evaluate their own learning activities. By linking academic content with English language development, as in CALLA, student value for learning should be high.

In sum, learning strategy instruction is designed to enable students to be independent and autonomous learners whose motivation for school learning comes from an awareness of their own skills as a learner, experience in using these skills with materials of the kind they expect to encounter, and value in being able to link new information either to personal experience or to new applications. Furthermore, if students believe that they are learning important tools for learning through strategy instruction, self-esteem and self-confidence should increase accordingly.



### Using Learning Strategies for Motivation

- ❖ **Expectations**—support students' expectations of success by building on previous knowledge, scaffolding, and strategy instruction.
- ❖ **Value**—increase students' value of academic material by linking language to content.
- ❖ **Attribution**—encourage students to monitor their own learning activities and to identify strategies that effectively support their learning efforts.

### Application Activities

1. Conduct a learning strategy interview to enable students to report on the strategies they use in second language learning tasks, to find out about approaches to learning other than the ones they are using, and to discuss with other students the best ways for learning in a second language classroom.
  - a. Refer to Table 4.3, Learning Strategies in the Academic Curriculum: Interview Guide provided at the end of this chapter. This table describes both language tasks and content subject tasks requiring language.
  - b. Select one of the tasks identified in Table 4.3 that is representative of work performed by your students. Interview students in small groups of three or four, and ask them to indicate the techniques or "special tricks" they use to understand, learn, or produce the language for that task. Use the specific questions indicated for each task.
  - c. As students describe their techniques or learning strategies, comment on the use of the strategy. Ask questions to ensure that all students understand the way in which the student reporting uses the strategy. Ask additional questions if students do not understand what to do. If necessary, give an example of a strategy to prompt the discussion.
  - d. Make brief notes of the strategies students describe for the task. You may want to assign labels to the strategies when you review your notes so that you can later refer to the strategies by name. Use the strategy names in Table 4.1, or invent other descriptive labels. Keep these notes for potential use in the Presentation phase of CALLA instruction, as some of the strategies students describe may be highly effective approaches that should be shared with all students.
  - e. Continue with discussions of learning strategies for other tasks in the same manner as described in Steps b-d.
2. Make learning strategy posters. Learning strategy posters can be useful in the classroom as reminders of strategy names and the mental processes associated with each strategy. Review the samples of learning strategy posters provided on page 76. Adapt the strategy names if desired, and make a poster for each strategy category (metacognitive, cognitive, social/affective). You may also develop posters for specific content areas (see Table 9.3, Table 10.3, Table 11.2, and Table 12.1 for learning strategies for different subjects).

- a. Color-code the paper for learning strategy posters as follows: Metacognitive Strategies = blue (blue represents calmness and control); Cognitive Strategies = green (green represents growth); Social/Affective Strategies = orange or other warm color (warm color represents social and affective dimensions). Laminate the posters and display them in your classroom.
  - b. Use the posters as a reminder to students about the strategies taught and practiced.
  - c. Refer to the posters when modeling strategies.
  - d. Have students refer to the posters when discussing strategies.
3. Design a learning strategies lesson in which students become aware of and learn how to use learning strategies. Use Table 4.4 to help you design the lesson.
- a. Select a content area appropriate for the curriculum you are teaching (e.g., science, math, language arts). Then select a content lesson from available materials in this area using the CALLA Instructional Sequence. (See Chapter 5.) As you design the lesson, identify one or more learning strategies appropriate for the content and learning tasks. Select one task and one learning strategy objective to teach with this content.
  - b. Complete the information at the head of Table 4.4 (ESL and grade levels of students, task, strategy to be taught, materials needed). Complete the learning strategy lesson plan by answering the questions asked for each phase of the lesson (e.g., Preparation, Presentation, Practice, Evaluation, and Extension).
  - c. Try the learning strategies lesson with your students, evaluate the results, and revise as needed.
4. Use the following learning strategy activities. They are useful for both teachers and students because they increase understanding of learning strategies and help in monitoring the acquisition and use of learning strategies.
- a. Keep a learning log on the strategies you have used/are using on tasks related to student tasks (e.g., acquiring information through listening, reading, conversing, writing). As you work on a task, describe aloud on tape or write how you are approaching the task. Identify the learning strategies *you* use and reflect on ways in which you can model these strategies for your students during the Presentation phase of CALLA instruction.
  - b. Have students complete a learning log for learning strategies. Students should list the strategies on which they are working and indicate tasks with which the strategies are used. Ask students to describe the experiences they are encountering in working with these strategies, identifying successes and ways of overcoming difficulties. These learning logs can be shared with the teacher and with classmates in cooperative learning groups. Refer to the sample Student Learning Log on page 79.
  - c. Ask students to identify a learning strategy with which they have experienced success and to share it with a classmate. Have students describe the task, the strategy, how to use it, and how they know it worked with the task.
  - d. Have students identify new materials or a new task on which to apply a learning strategy they have used successfully in the past. This new application could be in another classroom, with a different teacher, in another content area, or with a different task. Ask students to report these new strategy applications to the class.

# SAMPLE LEARNING STRATEGY POSTERS

## METACOGNITIVE STRATEGIES

### THINK:

How do I learn?

How can I learn better?

### WHAT I CAN DO:

PLAN what I will do.

Use SELECTIVE ATTENTION.

MONITOR what I am doing.

EVALUATE what I have done.

## COGNITIVE STRATEGIES

### THINK:

How can I understand?

How can I remember?

### WHAT I CAN DO:

ELABORATE prior knowledge.

CLASSIFY or GROUP ideas.

Make INFERENCES and PREDICT.

SUMMARIZE important ideas.

Use IMAGES and PICTURES.

## SOCIAL/AFFECTIVE STRATEGIES

### THINK:

How can I help others learn?

How can others help me learn?

### WHAT I CAN DO:

ASK QUESTIONS for clarification.

COOPERATE with classmates to learn.

Use positive SELF-TALK.

## PROBLEM-SOLVING STRATEGIES

### THINK:

How can I solve math problems?

### WHAT I CAN DO:

• UNDERSTAND the question.

Rewrite the question as a statement.

Leave a blank for the correct answer.

• Find the DATA.

Look for the numbers needed to solve the problem.

• Make a PLAN.

Choose the OPERATION.

Make NUMBER SENTENCES.

Make a LIST or TABLE.

Draw a PICTURE.

Solve a SIMPLER problem.

GUESS and CHECK.

Find PATTERNS in the numbers.

Work BACKWARDS.

• Find the ANSWER.

• CHECK BACK.

ESTIMATE the answer.

Work BACKWARDS.

READ the question again.

**Table 4.3**

**LEARNING STRATEGIES IN THE ACADEMIC CURRICULUM**

**INTERVIEW GUIDE**

Directions: Interview students individually or in small groups of 3-4. Ask about activities that students have actually done. If possible, interview students in their native language or seek the assistance of a bilingual student.

<p><b>1. Vocabulary Learning - All Subjects</b></p> <p>You have to learn the meanings of 20 new words in English.</p> <p>Do you have any special tricks to help you learn and remember the new words and what they mean?</p>	<p><b>6. Reading Comprehension - Language Arts</b></p> <p>You have to read a story or novel chapter silently. You need to understand the plot and characters, then retell the story.</p> <p>What do you do to understand the plot and characters?</p> <p>What do you do about new words? How can you remember and retell the story?</p>
<p><b>2. Following Directions - All Subjects</b></p> <p>Your teacher gives you directions for a worksheet or a math problem or a science experiment. You have to understand what to do, and then do it.</p> <p>Do you have any special tricks to help you understand what to do? What do you do if you forget what to do?</p>	<p><b>7. Solving Word Problems - Mathematics</b></p> <p>You have to read and solve a word problem in math.</p> <p>What special ways do you have to understand the problem?</p> <p>How do you know which operation(s) to use?</p> <p>How do you know if your answer is correct?</p>
<p><b>3. Listening to a Story - Language Arts</b></p> <p>Your teacher is reading a story to the class. You don't understand all of the words. Then your teacher asks you to predict an ending for the story.</p> <p>What do you do about the words you don't understand?</p> <p>How do you make up a good ending for the story?</p>	<p><b>8. Reading for Information - All Subjects</b></p> <p>You have to read several pages in your science or social studies book. You need to understand and remember the important information.</p> <p>What do you do to understand the information as you read?</p> <p>What do you do to remember the information later on?</p>
<p><b>4. Listening for Information - All Subjects</b></p> <p>Your teacher explains some important ideas in science, social studies, or literature. You have to understand and remember the information.</p> <p>What do you do that helps you understand the teacher?</p> <p>What do you do to remember the information later?</p>	<p><b>9. Presenting an Oral Report - All Subjects</b></p> <p>You have to give an oral report about a project that your group worked on in science or social studies.</p> <p>What do you do to get ready for the report?</p> <p>What helps you do a good job when you present the report?</p>
<p><b>5. Reading Aloud - All Subjects</b></p> <p>You have to read something aloud. You need to say the right words and pronounce the words correctly.</p> <p>What do you do to figure out each word?</p> <p>What do you do to help your pronunciation?</p>	<p><b>10. Writing a Story, Composition, or Report - All Subjects</b></p> <p>You have to write a story or a composition or a report.</p> <p>What do you do first? What do you do while you are writing?</p> <p>What do you do after you have written the story or report?</p>