# *S*trateggram ™

# Strategy instruction **&** tutoring

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An effective tutoring program should, at the very least, address the real-world needs of teachers and their students.

"The old story about teach a man to fish and he'll feed himself forever has a lot of merit. The trouble is that the way it works out right now, it just doesn't work. There isn't the time. We've got eight, 42-minute periods, and just getting stuff done, what with all that comes up during a day, makes it tough. Our focus and the district focus is on inclusion; we are out in general education classes, so we are not always in the [resource] room. So our focus has to be to make sure that the kids are getting through, and it is pretty difficult to do something that is separate from helping my kid pass the next test.

"The truth is I have to ask myself which is more important: teaching them a strategy that they can use in a lot of classes, or getting them through the class they're in right now. And for me, the answer has to be both. ***I have to do both,*** and that can be a real challenge. In the ideal world, where there's no homework and no general education assignments, I put strategies up there at a 9 or 10. But this isn't the ideal, this is the real. And in our real world, if we can help our kids pass while teaching them strategies, hey, I say it's great."

*—Special education teacher
in an interview with Jim Knight,
KU-CRL research associate*

In the quote above, one teacher's perception of the "real world" captures the dilemma faced by many special educators. That is, how can they address the immedi-

ate needs of their students ***and*** ensure that students learn strategies that support independence and self-sufficiency? Although there are several possible solutions to this dilemma, I'd like to describe an intervention called *Strategic Tutoring* (Hock, Deshler, & Schumaker, 2000). Strategic Tutoring is designed to address the real-world challenge described above by meeting both the short-term (assignment help) and long-term (strategy instruction) needs of students deemed to be at risk for academic failure.

*Give me a fish, and I eat for a day.
Teach me to fish, and I eat for a lifetime.*
—Chinese Proverb

Before I describe Strategic Tutoring, I'm going to ask you to think outside the Strategic Instruction Model "strategy manual box" for a moment. Specifically, as you read and think about Strategic Tutoring, think about the elements of good strategy instruction and not so much about how strategies instruction has been packaged in the past. Try to think of Strategic Tutoring as an extension of SIM that responds to the real world the teacher described. Thus, rather than evaluate Strategic Tutoring in terms of its departure from strategy instruction as we currently know it, evaluate Strategic Tutoring in light of outcomes that support the development of students who know how to learn and perform successfully and independently.

## The real world and tutoring

Teachers who work with at-risk >>>

students are searching for ways to keep them from failing in general education classes. Increasingly, these teachers are tutoring their students. That is, they are helping them complete homework assignments, review for quizzes and tests, write papers, and complete other tasks for their classes. Although well-intentioned, assuming that tutoring will result in increased classroom performance and the development of independent learners may be overly optimistic.

Indeed, some forms of tutoring may be more harmful than helpful. For example, Carlson (1985) suggests that subject-matter tutoring for special education students by special education teachers may be unethical since students rarely acquire the skills necessary to become independent thinkers and learners through such tutoring.

Other researchers have reported that tutored student performance gains were minimal or non-existent. Specifically, Farr (1998) found that tutored student's grades in physical science classes showed little or no change after students received tutoring. Worst of all, tutoring may actually make students dependent on others for academic success.

## An effective tutoring model

An effective tutoring program should, at the very least, address the real-world needs of teachers and their students. Tutoring must be effective in significantly improving the scores of students on quizzes and tests and the semester grades they earn in general education classes. Additionally, tutoring must support the development of independent and strategic learners who know a large number of useful strategies and also know when, where, why, and how to use those strategies.

When tutors "strategically tutor," that is what they strive to accomplish. Strategies for learning how to learn and perform are taught to students *while* they receive help with class assignments (Hock, Schumaker, & Deshler, 1995). Thus, not only is short-term support provided (that is, help with homework), but students also are taught powerful learning strategies that allow them to perform independently in their classes.

For example, if a student is working with a tutor and has the assignment to complete a number of math homework problems and prepare for math quizzes and tests, a strategic tutor would quickly introduce the student to a strategy for learning math content while helping the student complete homework problems.

The strategy the tutor teaches might include several problem-solving steps (see Figure 1).

First, the learner might "*M*ap out the problem" by carefully reading the problem, underlining key words, and determining what needs to be solved.

Then, the learner might "*A*nalyze the problem" by identifying the type of problem he or she needs to solve, looking for >>>

## The MATH Strategy

### Map Out the Problem
- Read the problem aloud
- Underline key words
- Determine what to solve

### Analyze the Problem
- Identify the type of problem
- Compare to examples
- Find given information
- Identify unknown information
- Estimate the answer

### Take Action
- Identify methods for solving
- Select a method or formula
- Utilize a formula
- Solve the problem
- Problem-solve if stuck

### Have a Look Back
- Compare the answer with the estimate
- Check calculations
- Write the solution

*Figure 1*

example problems in the textbook, and estimating the answer.

Next, he or she could "*T*ake action" by selecting a method or formula to solve the problem.

Finally, the learner might "*H*ave a look back" by comparing the answer to the estimate made earlier and by checking his or her work (Hock, in prep).

By using the strategy described above repeatedly and under the direction of a strategic tutor, the student applies a strategy that not only helps solve homework problems now but, more importantly, also provides a strategy for independently completing math assignments and taking quizzes and tests in the future.

### Conducting a Strategic Tutoring session

When a student participates in tutoring sessions with a strategic tutor, the tutor guides the student through four instructional phases (see Figure 2). These phases borrow heavily from SIM's eight stages of acquisition and generalization.

First, in the Assessing Phase, the tutor assesses the student's knowledge of the assignment, the effectiveness of the student's current approach to the task, and the tutor's knowledge of strategies that might be used for the task at hand.

If the strategy the student currently uses is ineffective or inefficient, the tutor moves to the second phase of instruction, called "Constructing." During the Constructing Phase, the tutor creates a new strategy with the student. In most cases, the newly constructed strategy will include elements of the student's current strategy that have been combined with a strategy offered by the tutor.

However, if the tutor doesn't have a ready-made strategy for the task in his or her "tool box," the tutor and student proceed to create a strategy on the spot.

This process involves the tutor and students working together on the assignment for a while and then "standing back" and identifying what they are doing to complete the task. That is, the tutor identifies each step of the strategy that he or she and the student have been using to complete the task.

For example, the tutor might say, "Okay, we've been working on this task for a while, let's step back for a second and take a look at what we've been doing.

"You needed to memorize the meaning of 10 Spanish words. To do that, the first thing we've been doing is writing each Spanish word on the front of a card and the meaning of the word on the back of the card. Thus, our first step is 'Make a card.' [The tutor writes the step on a piece of paper.]

"Next, we've thought of an English word that is similar to the Spanish word. We wrote that on the back of the card, too. That's our second step: 'Choose a similar English word.' [The tutor writes the step.]

"Next, we thought of a picture that contains the English word and the meaning of the Spanish word. That's our third step: 'Make a picture.' [The tutor writes the step.]

"Last, we practiced thinking of the Spanish word, then the English word, then the picture, then the meaning of the Spanish word. That's our fourth step: 'Practice.' [The tutor writes the step.]

"We have four steps here that you can follow every time you need to memorize the meaning of a foreign word. In other words, we have created a strategy >>>
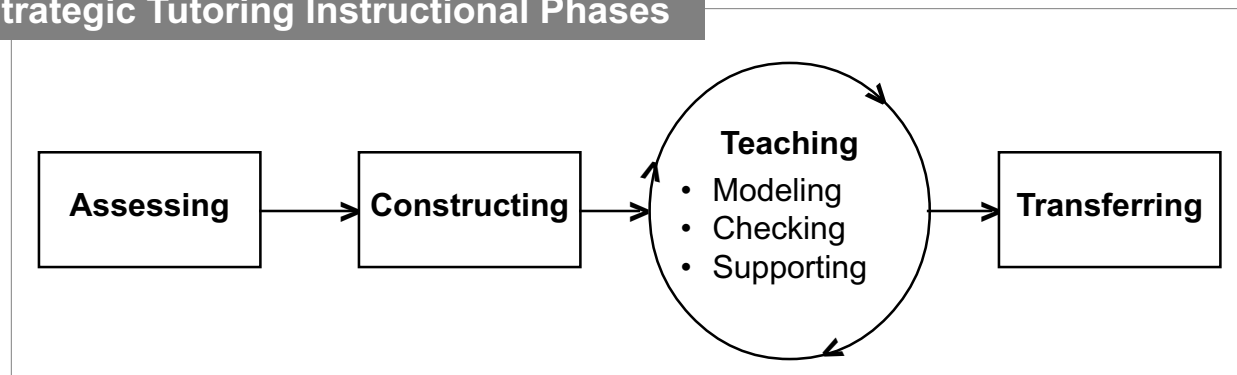
## Strategic Tutoring Instructional Phases



*Figure 2*

for learning foreign words. You could use this strategy for any foreign language and for sure for any Spanish words you need to learn.

"Let's see if we can create a memory device that will help you remember these four steps. How about this?

· **M**ake a card
· **A**dd an English word
· **T**ake a picture, and
· **S**ay the practice sequence.

"If you look at the first letter of the first word for each step, you see the word **'MATS**.' You can use the word 'MATS' to remind you of the steps to follow when memorizing the meaning of foreign words."

After a strategy has been developed in this manner, the tutor begins the Teaching Phase, which involves modeling how to use the strategy, checking the student's understanding, and providing support as the student practices the strategy.

Tutors model strategies for students by demonstrating how to use each step of the strategy: They think aloud as they problem solve and apply the strategy to actual assignments. Thus, the student has an opportunity to see an expert use the strategy in

the context of the student's current assignment.

After the tutor models the strategy for the student, he or she checks to ensure that the student understands each of the strategy steps and has taken notes that can be used for reference when the student uses the strategy independently.

In the final step of the Teaching Phase, the tutor acts as a guide as the student applies the strategy to his or her assignment. During this step, the tutor provides positive and corrective feedback, additional explanation and modeling as needed, and helps the student whenever the student gets "bogged down."

The final phase of instruction is called "Transferring." During the Transferring Phase, the tutor helps the student plan for independent application of the strategy in general education classrooms or other learning environments. For example, the tutor may help the student identify classroom situations in which the student can apply a learned strategy. For the MATH Strategy described earlier, the tutor might cue the student to use the strategy when taking a coming

math test or quiz. Thus, the student would recall the steps of the MATH Strategy and proceed through each step when solving math problems found on tests and quizzes in the general education classroom.

In this fashion, tutors not only teach a strategy that helps students complete class assignments successfully, but, more importantly, they also teach students a strategy that can be used independently whenever students encounter similar assignments or tasks.

## Supporting research

Several research studies have been conducted to demonstrate the effectiveness of Strategic Tutoring. In one study, conducted in an after-school tutoring program for at-risk junior-high-school students, Strategic Tutoring was found to be effective in improving the quiz and test performance of students enrolled in transition math, Algebra I, and biology classes. In general, these students improved their semester grades from Fs and Ds to Cs and Bs.

The improvement in scores were indicative of dramatic, socially significant, and robust gains for all students who attended tutoring sessions on a regular basis. For example, the student with the smallest gain improved from earning 60 percent to earning 87 percent of all possible points on math quizzes and tests. His quarterly grades improved from the D- range to the B+ range (Hock, Pulvers, Deshler, & Schumaker, in press).

performances, student knowledge of specific strategies also increased markedly. After Strategic Tutoring, most of the students were able to describe useful strategies that addressed the demands they faced in the tutored course. These strategies were very different from the strategies they described before the Strategic Tutoring intervention.

The ultimate goal of Strategic

parison group experienced a mean gain of 3.50 months during the same period.

Additionally, the mean grade-point average of the comparison group actually declined by .04 even though they received traditional tutoring support. In contrast, the mean GPA of the Strategic Tutoring group increased slightly by .37.

Finally, the youth in this study significantly increased their

This ideal is what we consistently strive to attain.

Unfortunately, the ideal does not exist in all schools and for all students. The real world may demand that we address the immediate short-term needs of students in a manner that keeps them academically afloat while we work to develop their proficiency as strategic learners. This is the real-world niche targeted for Strategic Tutoring and the

> Give me a fish while you're teaching me how to catch my own.
> That way, I won't starve to death while I'm learning to tie flies.
>
> —Rainbow Mike

Tutoring is the development of proficient and independent learners. The majority of students in this study were able to maintain a high level of performance several weeks after Strategic Tutoring services were no longer available. Thus, some indication of Strategic Tutoring's effectiveness with regard to the development of independent learners was obtained.

In another study, at-risk youth in foster care were matched with a comparison group of foster care youth with similar profiles and academic needs. Students in the Strategic Tutoring condition made gains in academic performance that were greater than the students in the comparison group.

In fact, the students in Strategic Tutoring improved their achievement test scores in reading comprehension, written expression, and basic math skills as measured by the Woodcock Johnson Achievement Test Battery. As a group, they increased their mean achievement grade-level scores by 10 months during a four-month instructional period. The students in the com-

knowledge of specific strategies and self-regulating learning behaviors (Staub & Lenz, 2000).

In sum, Strategic Tutoring has been found to improve student performance on quizzes and tests in general education classes; skill levels in math, reading, and written expression; and knowledge of cognitive and metacognitive strategies.

## Striving for the ideal while dealing with the real

In the ideal world, as conceptualized by SIM proponents, an array of support services is available to students with learning disabilities and others who are at risk. Briefly, these services include Content Enhancement Routines that enhance teacher planning and delivery of content to all students, embedded strategy instruction in core curriculum courses, intensive learning strategy instruction by specialized teachers for students who have not benefited from embedded strategy instruction, one-to-one instruction in literacy skills, and the availability of individualized support services such as language and speech therapy.

area in which Strategic Tutoring extends SIM.

### References

Carlson, S.A. (1985). The ethical appropriateness of subject-matter tutoring for learning disabled adolescents. *Learning Disability Quarterly, 8,* 310-314.

Farr, M. (1998). Nikerson high school physical science after-school tutoring program. *Journal of Critical Inquiry Into Curriculum and Instruction, 1*(1), 41-47.

Hock, M.F. (in prep). *The strategic tutoring series: The math strategy.* Lawrence, KS: Edge Enterprises.

Hock, M.F., Deshler, D.D., & Schumaker, J.B. (in press). The effects of an after-school tutoring program on the academic performance of at-risk and students with learning disabilities. *Remedial and Special Education.*

Hock, M. F., Deshler, D. D., & Schumaker, J. B. (2000). *Strategic Tutoring.* Lawrence, KS: Edge Enterprises.

Hock, M.F., Schumaker, J.B., & Deshler, D.D. (1995). Training strategic tutors to enhance learner independence. *Journal of Developmental Education, 19,* 18-26.

Staub, D. & Lenz, B.K. (2000). The effects of strategic tutoring on Casey youth. *The Casey Family Program.* Seattle, WA.

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# Tiger Cops

## Paragraph Writing Checklist

**Kathy Boyle-Gast,** interrelated resource teacher at Timothy Road Elementary School in Athens, Georgia, has developed the Tiger Cops Paragraph Writing Checklist to teach the very basics of paragraph writing to her intermediate students.

"It seems to work for them because it's less complicated than the inclusion of some of the components of the *Paragraph Writing Strategy,*" she reports.

In addition to the full checklist, Kathy has made a bookmark featuring the words "Tiger Cops."

As you write your paragraphs, always use this checklist. Be sure to go back and read each sentence that you write! Ask yourself these questions:

1. Do I have a topic sentence that tells what the main idea of the paragraph is?
2. Did I indent the first sentence of the paragraph?
3. Are all sentences complete, with a subject and a predicate? Go back and read each sentence to check!
4. Does each noun agree in number with its verb? Examples: the dog and cat are (not the dog and cat is), she plays (not she play), we write (not we writes).
5. Do all of the sentences relate to the topic? Are all supporting details about the topic?
6. Does each sentence begin with a capital letter?
7. Is the overall appearance of the paragraph neat?
8. Does each sentence have the correct end punctuation?
9. Is the last sentence a summary or "wrap-up" sentence?

An easy way to remember each checkpoint: Think of the words Tiger Cops.

T = Topic sentence
I = Indent first sentence
G = Go back and read each sentence: Make sure it's complete
E = Each noun agrees in number with its verb
R = Related supporting details only

C = Capitalize the beginning word of each sentence
O = Overall appearance is neat
P = Punctuate each sentence
S = Summary sentence is last

# SIM training opportunities in 2001

### Strategic Instruction Model Workshop Writing Strategies
**June 13-15 (Wed.-Fri.); $395 (U.S.)**

This workshop is designed to provide the tools necessary for teachers in general education settings to incorporate the SIM writing curriculum into their courses. Participants will receive training in *Fundamentals* and *Proficiency in the Sentence Writing Strategy, Paragraph Writing, Error Monitoring, Theme Writing,* and *InSPECT* from the SIM Learning Strategies Curriculum. Registration is due by May 4, 2001.

### Strategic Instruction Model (SIM) Workshop Level I
**June 20-23 (Wed.-Sat.); $395 (U.S.)**

Teachers who have had no training in SIM or perhaps have been trained in only one or two strategies will benefit from this four-day workshop. Teachers will receive a SIM Overview and will be taught to implement the *SLANT, Sentence Writing, Word Identification, Test Taking, Paraphrasing,* and *Self-Advocacy* strategies, and one Content Enhancement Routine. Registration is due by May 4, 2001.

### Strategic Instruction Model (SIM) Workshop Level II
**June 20-23 (Wed.-Sat.); $395 (U.S.)**

This workshop is for teachers who already have been trained in SIM procedures and have implemented instruction in some of the strategies or routines with students considered to be at risk for failure. The following strategies will be offered: *Error Monitoring, Paragraph Writing, Visual Imagery, Self-Questioning, Vocabulary, Memory, Self-Advocacy,* and *Assignment Completion.* A few Content Enhancement Routines also will be offered. Registration is due by May 4, 2001.

### SIM Workshop Content Enhancement
**June 18-22 (Mon.-Fri.); $395 (U.S.)**

This workshop is designed to provide an opportunity for teachers to learn how to use Content Enhancement Routines to enhance the way they present content and improve students' ability to organize, understand, and remember critical information. The following routines from the Content Enhancement Series will be offered: *Concept Mastery, Concept Comparison, Unit* and *Course Organizers, Survey, Clarifying, Framing,* and *Quality Assignment.* Registration is due by May 4, 2001.

### Strategic Instruction Model Workshop Reading Strategies
**June 25-27 (Mon.-Wed.); $350 (U.S.)**

This workshop is designed to provide the tools necessary for teachers in general education settings to incorporate the SIM reading curriculum into their courses. Participants will receive training in the *Word Identification, Self-Questioning, Paraphrasing, Visual Imagery,* and *PREP* strategies along with the *Survey Routine.* All instructional materials for these strategies have been modified to decrease the difficulty of teaching strategies to large groups of students. Registration is due by May 4, 2001.

### Workshop for Potential SIM Content Enhancement Trainers
**July 30-Aug. 3 (Mon.-Fri.); $510 (U.S.)**

Participants in this workshop will be selected through an application process. Individuals who have previously been trained in and have successfully implemented a variety of Content Enhancement Teaching Routines will begin the process of becoming Content Enhancement Trainers. Applications should be postmarked by April 16, 2001.

### Workshop for Potential SIM Learning Strategy Trainers
**July 30-Aug. 3 (Mon.-Fri.); $510 (U.S.)**

Participants in this workshop will be selected through an application process. Individuals who have been trained in the strategies and have implemented strategy instruction will begin the process to become Learning Strategy Trainers. Teachers need to have implemented instruction in at least four strategies; supervisors and coordinators must have implemented instruction in at least two strategies with at least one student. Applications should be postmarked by April 16, 2001.

### Pedagogies for Academic Diversity in Secondary Schools
**May 29-June 1 (Tues.-Fri.); $510 (U.S.)**

This workshop is designed to enable college/university faculty to prepare teachers to implement a variety of teaching routines from the Content Enhancement Series. Applications are due by April 3, 2001.

**More information:** Fees cover the cost of materials provided with the training. Participants will be responsible for their own transportation, housing, and meals. For more information, visit the CRL Web site, www.ku-crl.org, or contact **Workshops**, KU-CRL, 521 Joseph R. Pearson, 1122 West Campus Rd., Lawrence, KS 66045-3101, (785) 864-4780. E-mail requests may be sent to crl@ukans.edu.

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