

The University of Kansas

Center for Research on Learning

presents the

Strategic Instruction Model

in support of
secondary literacy



KU CENTER FOR RESEARCH ON
LEARNING
The University of Kansas

The University of Kansas
Center for Research on Learning

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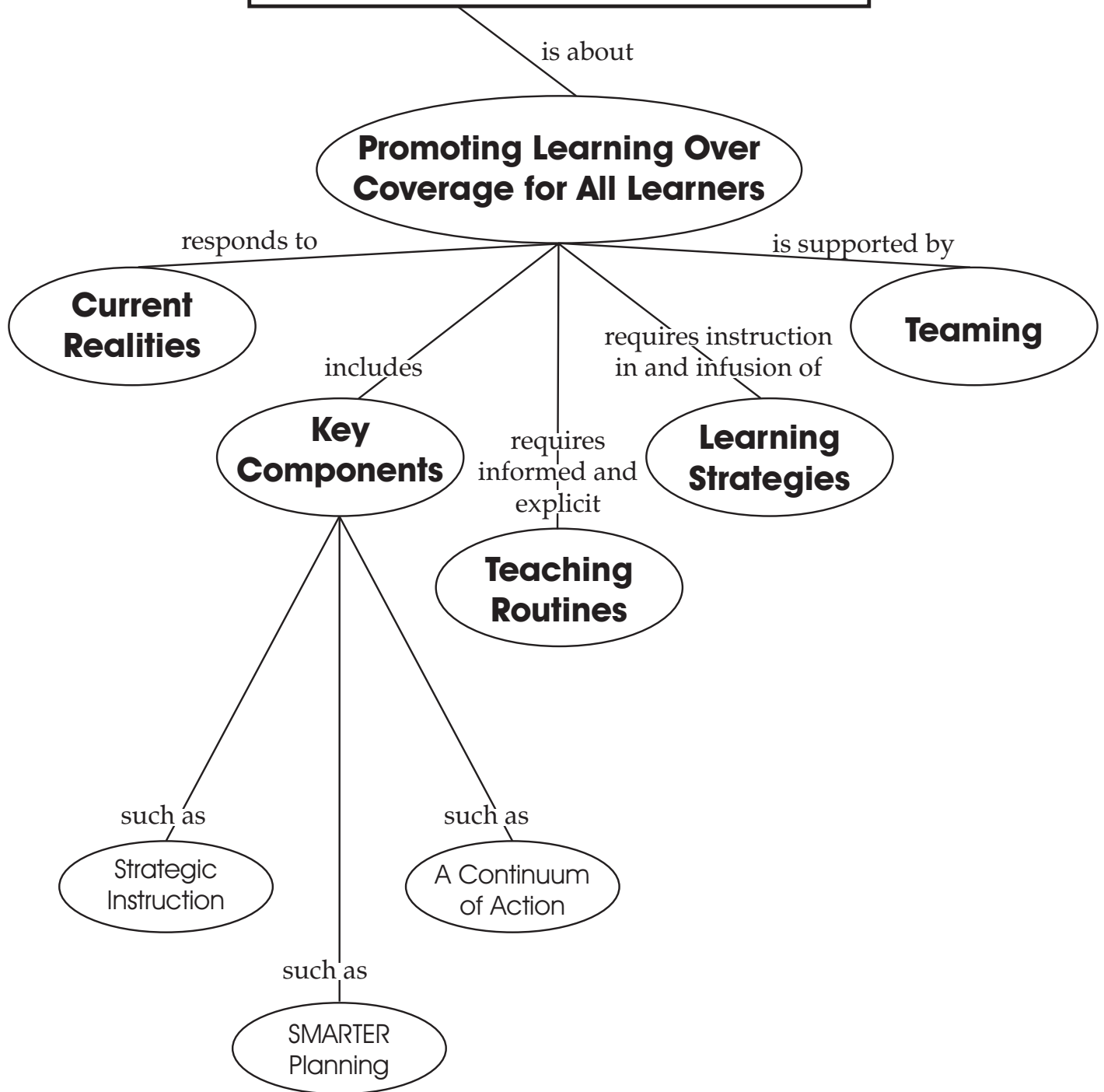
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Strategic Instruction Model Introduction

Strategic Instruction Model



Overview

Since 1978, we have conducted research designed to develop ways to help students meet the demands of life, not just in school but after they leave school as well. Our overriding goal has been to develop an integrated model to address many of the needs of diverse learners.

Out of this effort, the Strategic Instruction Model, or SIM, has evolved. In essence, SIM is about promoting effective teaching and learning of critical content in schools. SIM strives to help teachers make decisions about what is of greatest importance, what we can teach students to help them to learn, and how to teach them well.

We advocate trying to teach a little less content, but teach it better.

Underlying our research and all components of SIM, we adhere to four philosophical principles:

1. Most low-achieving adolescents can learn to function independently in mainstream settings.
2. The role of the support-class teacher is to teach low-achieving adolescents strategies that will enable them to be independent learners and performers.
3. The role of the content teacher is to promote strategic behavior and to deliver subject-matter information in a manner that can be understood and remembered by low-achieving adolescents.
4. Adolescents should have a major voice in decisions about what strategies they are to learn and how fast they are to learn these strategies.

Building on these principles, we have developed two kinds of interventions to address the performance gap, the gap between what students are expected to do and what students are able to do.

1. *Teacher-focused interventions* are directed at how teachers think about, adapt, and present their critical content in “learner-friendly” fashion. Content Enhancement Routines are sets of

inclusive teaching practices that help teachers carefully organize and present critical information in such a way that students identify, organize, comprehend, and recall it.

2. *Student-focused interventions* are designed to provide the skills and strategies students need to learn the content. The Learning Strategies Curriculum encompasses strategies for acquiring information from the printed word, strategies for organizing and memorizing information, strategies for solving math problems, and strategies for expressing information in writing (including on tests).

In addition to these two types of interventions, SIM addresses the realities teachers face in today’s classrooms through the use of a planning technique called SMARTER and recognition of the need for teamwork to achieve instructional goals.

SMARTER planning is a framework teachers can turn to when making decisions about content at the course, unit, or lesson level of planning.

Teamwork among teachers, administrators, parents, and others involved in students’ lives can help provide a sustained, well-coordinated, and well-orchestrated balance of curriculum content, skills, and strategies.

RIGOROUS STANDARDS

The Strategic Instruction Model is based on research from a variety of fields and theoretical perspectives and is designed to serve as a guide or umbrella for secondary program development. All components of the model have been evaluated in light of rigorous standards we have set for ourselves.

First, an instructional procedure must be palatable for teachers. If it isn’t, teachers won’t adopt it for use in their classrooms.

Second, the instructional procedure must have value and be perceived to have value by high-

Strategic Instruction Model

achieving and average-achieving students.

Third, the procedure must be sufficiently powerful to have an effect on low-achieving students.

Fourth, the procedure must result in statistically significant gains for students.

Fifth, the procedure must result in *socially* significant gains for students. In other words, if a procedure results in an increase in a student's performance from 20 percent to 40 percent, although the result might be statistically significant, it is not socially significant because the student is still failing.

Finally, the degree to which students will maintain a skill or strategy they have been taught

and generalize it for use in other settings is important in determining whether the instructional procedure is successful and has merit.

SIM's components—Content Enhancement Routines, Learning Strategies Curriculum, and supporting materials—give teachers access to a breadth and depth of instructional procedures to address many of the challenges they face in the classroom. As a result, more students who are at risk now can realize success in school.

The key to making strategic instruction a reality is to realize that it takes time—months or years even—and a strong administrative and instructional commitment.

The Performance Gap

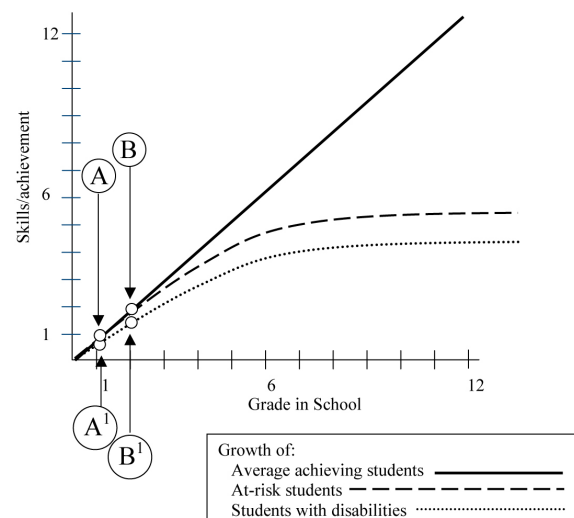
The problems that at-risk students face when trying to succeed within the rigorous general education curriculum are great. Unless they have the necessary skills and strategies in place to respond to the heavy curriculum demands, they will encounter failure and great frustration. The figure below illustrates the dilemma faced by teachers and students in today's schools. The straight, solid line represents the path of "normal" acquisition of knowledge or skills by typical students. That is, at the conclusion of one year of instruction, on average, students should have acquired what we would deem to be "one year's worth" of knowledge represented by point A on that line. At the end of the second year, they should be performing at the level of point B, and so on. On the other hand, the performance of students with disabilities usually does not follow this line of progress. On average, they perform at the level of point A' at the end of one year of schooling and travel a path similar to the one depicted by the dotted curved line. The area between the solid line (representing normal achievement) and the dotted line (representing underachievement) depicts the "performance gap," the gap between what students are expected to do and what they can do. Over time, this gap grows larger and larger, and it is especially exacerbated in the later grades when the academic growth of at-risk students plateaus. As a result of this performance gap, these students are unable to meet the demands of required courses in the content areas in high school, and their resulting failure leads to discouragement and disengagement in school.

While this figure helps to describe the failure experienced by students with high-incidence disabilities, its greatest value is in determining the focus of interventions that should be employed to close the performance gap to a point where students are able to truly access and benefit from the

general education curriculum. Over the past 23 years, staff at the University of Kansas Center for Research on Learning (KUCRL) and their associates have taken two major tacks trying to close the performance gap:

- developing interventions (**called Content Enhancement Routines**) that focus on how information is selected and presented to academically diverse classes (that include students with disabilities) so that it is more understandable and memorable (i.e., compensating for the gap); and
- developing interventions (**called Learning Strategies**) that focus on teaching these students the necessary skills and strategies to enable them to successfully negotiate the demands of the curriculum (i.e., eliminating the gap). The first type of interventions

The Performance Gap



(teacher-focused interventions) is directed at how *teachers* think about, adapt, and present their critical content in a "learner-friendly" fashion. The second type of interventions

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(student-focused interventions) is designed to provide to *students* the skills and strategies that they need to learn the content.

KUCRL researchers have concluded that *both* types of interventions are needed (Fisher, Schumaker, & Deshler, 2001) if at-risk students are to demonstrate appropriate achievement levels on state assessment tests as well as demonstrate

real-world content literacy (Deshler, Ellis, & Lenz, 1996; Lenz & Ehren, 1999). To best understand how Content Enhancement Routines and Learning Strategies are related within the context of an instructional plan to meet the broad array of literacy challenges with a school, the **Content Literacy Continuum** is used as an organizing structure.

An Evaluation of the Strategies Instruction Model*

by Michael Pressley, Distinguished Professor of Education, University of Notre Dame**

Researchers at the University of Kansas Center for Research on Learning (CRL) (Deshler & Schumaker, 1988; Schumaker & Deshler, 1992; Lenz & Bulgren, 1995) have devised reading, writing, and an array of study and learning strategy interventions aimed at improving important academic competencies in middle and high school students. The focus of their research has been at-risk students including those with learning disabilities. We cover the University of Kansas work here because it provides an outstanding model of how to devise, validate, and distribute cognitively based instruction that can promote the literacy of a large number of middle and secondary students, including their abilities to acquire, store, and communicate important information.

There are five phases in the CRL curriculum development model, with these occurring roughly in the following order:

1. *Identification phase.* They first determine the demands placed on students in school. As part of this effort, the CRL group spends time in school settings determining what secondary students are asked to do in order to be successful in class and in meeting outcome assessments. This information is combined with knowledge of deficiencies of weaker students, such as their memorizing, organizing, reading, and writing problems as documented in the research literature and evident in schools studied by the CRL group.
2. *Design phase.* Once a performance goal is targeted (e.g., to increase at-risk students' abilities to write paragraphs at level of proficiency that would enable them to pass a state outcome exam), the literature is searched for information about strategies that may have already been identified in meeting the need. Often, there have been. Once a strategy has been identified as profitable to teach, step-by-step instruction is devised, as are methods of measuring whether students are learning the strategy. For example, when the goal was to teach students how to write paragraphs (see Schumaker and Lyster, 1991), a strategy involving the writing of paragraphs that integrated topic sentences, detail sentences, and clincher sentences was devised. Explicit descriptions of the strategy were created, as were methods of modeling the strategy. Various types of scaffolded practice were designed into the instructional package (i.e., the CRL team uses a very effectively designed direct explanation model of strategy instruction). There is a clear understanding at the outset about the type of paragraph writing that was expected at the end of the instructional unit and specification about how students could be taught to generalize the paragraph strategy across their school day once they had learned to construct such paragraphs as part of the controlled instructions.
3. *Pilot-test phase.* The intervention is tried out with a small number of students, with the researchers attempting to determine whether the instruction is sound, the measures reliable, and the strategy practical for students.
4. *Research phase.* One or several formal research studies are carried out. Typically the research

* Since renamed: Strategic Instruction Model.

** Pressley, M.P. & McCormick, C.B. (1995). *Cognition, teaching, and assessment*. New York: Harper Collins.

Current Realities

is school-based with classroom teachers (not researchers) teaching the strategy package. The strategy may be revised (or abandoned) in light of the data generated in the formal studies. See Schumaker and Deshler (1992) for a review of the research studies supporting their model.

5. *Refinement phase.* The goal is to make the intervention as useful as possible for a number of different settings. Feedback from teachers who have used the intervention is helpful during this phase. Once this phase is completed, the instructional procedure is translated into a manual (with accompanying support materials) that teachers can use in the classroom.

There are some exceptionally important features to the research approach used by the Kansas team: (1) The goals of the instruction are socially valid ones (i.e., the strategies meet demands students actually face). (2) Conventionally accepted research designs are used, often the multiple-baseline procedures developed as part of research on behavior modification (see Chapter 7). (3) The research and development are conducted in actual school settings. (4) Every effort is made to design instruction that teachers will accept and be enthused about, for without teacher acceptance, there will be no dissemination. (5) The criterion measures are ones tapping valuable outcomes; they are the indicators of school success and failure that are routinely collected in school. For example, the goal is not to produce statistically significant effects alone *but* effects that are significant in the lives of the students. Thus, improving grades a little bit can be statically significant with enough subjects in the research study. That would not be enough. Going from Fs to Bs on school assignments (e.g., ones involving writing of paragraphs) is the type of shift that the Kansas researchers attempt to produce (and often do produce).

The type of instruction advocated by the CRL is not a quick fix, with a new strategy learned over a period of several weeks. Several years of par-

ticipation are generally required for students to acquire a repertoire of strategies providing diverse means of acquiring, retaining, and writing about academic content. The instruction is developed by teachers who have received intensive instruction about how to use direct explanations, modeling, and guided practice during the initial acquisition of strategies and as part of teaching for generalization. Professional development is offered by a national network of trainers, with teachers often participating in such instruction over an extended period of time. *While on the surface, the requirements to become proficient in the use of these interventions can seem overly demanding, the CRL team seems to have it right – there are no quick fixes to the problems facing underachieving adolescents. Intensive, well designed instruction is required from exceedingly well trained teachers. What the Kansas team has designed and how they prepare teachers to use their interventions is right on target!*

What is exceptionally exciting, however, are successful efforts to teach strategies to junior college and university students who struggle with academic learning as well as minority students (Bulgren, McKnight, Deshler, & Schumaker, 1989; Denton, Seybert, & Franklin, 1988; Moccia, McKnight, Deshler, & Schumaker, 1990; see Schumaker & Deshler, 1992, for a review). Basketball fans might want to note that Deshler, Schumaker, and Lenz do their bit for the University of Kansas basketball program, which is a perennial contender for national ranking. They teach members of the team how to apply learning strategies in their university courses, providing a valuable source of assistance to students athletes who are often at academic risk but who always need to get the most out of the study time that is available to them during the season (Hock, Deshler, & Schumaker, 1991).

Despite the effort required by teachers to learn the Kansas model and the amount of time required by students to acquire a repertoire of strategies, such instruction is extremely well received by teachers, administrators, parents, and students,

with the learning and performance gains that result for the program worth the investment in instructional resources and student efforts. No one could examine the entire body of evidence generated by the CRL team and not conclude that they have devised important instructional programming that is effective. The completeness of their approach is unprecedented in the history of the design, validation, and implementation of curricula based on scientific analyses. The list of strengths is longer than the list of strengths for any other intervention discussed in this book. Their work is distinguished by (1) careful assessment of students' needs; (2) well informed design of strategies based on extensive knowledge of the cognitive, behavioral, special education, and educational psychology literatures; (3) validations in actual school settings; (4) attention to acceptability issues; (5) design of instructional methods that work to ensure acquisition and increase the likelihood of transfer; (6) design of effective teacher educations; and (7) distribution and administration of professional development throughout North America, Europe, and the

Pacific Rim. As far as the research-based curriculum development community is concerned, the Kansas group is the best of us. The rest of us can learn much from them. Students contemplating careers as curriculum designers should study the Kansas work carefully for guidance about how to devise instruction that works and will be used by the educator community.

For the most part, the need for better reading and writing instruction for adolescents and young adults is great. What the Kansas group teaches us is that it is possible to do research and development that is scientifically credible and has an impact on instruction in the United States. It is particularly important that Deshler, Schumaker, and their colleagues are now working with young adults, for no one has done for young adults what the Kansas researchers have done for adolescents: No one has conducted complete analyses of adult literacy needs, which stimulate development of instruction that transforms the lives of low literate and illiterate adults.

Student Success Formula

by Donald D. Deshler, Jean B. Schumaker, B. Keith Lenz, Janis A. Bulgren,
Michael F. Hock, Jim Knight, and Barbara J. Ehren*

Today's schools face numerous, difficult challenges in preparing students for their roles in the world. Content explosion—the ever-expanding amount of information being added to world knowledge daily—can be overwhelming when content coverage is a priority. Combined with the pressures of state standards, mandatory testing, and school reform prevalent in today's educational community, educators can feel ill-equipped to meet the needs of their students.

What, then, can schools and individual educators do to prepare students to successfully respond to heavy curriculum demands at the middle school and high school levels?

This publication describes the “Student Success Formula” that has emerged from nearly 25 years of research. The formula combines interventions designed to help students master critical content in general education courses, a service delivery model designed to optimize the quality of services provided to students, and a professional development program focused on changing instructional practices. Underlying it all is a foundation of strong and active administrative support and coordination.

A COMPREHENSIVE ARRAY OF SERVICES

Low-achieving students with learning disabilities require a comprehensive, well-conceptualized array of services that are focused on developing independent learners and performers capable of meeting high expectations both in the general edu-

cation curriculum and in life.

Successfully teaching subject-area content to students with learning difficulties is not a simple matter. The Student Success Formula requires a multifaceted approach by a team of well-trained and coordinated professionals. Students must receive daily instruction in the skills and strategies they need to succeed. Teachers must have clear responsibilities in the process.

Students must have access to instruction in *multiple strategies, across multiple settings and academic areas, from multiple teachers, across multiple schools and grades, and in multiple instructional areas.*

Foundational policy-level supports should include planning times that are conducive to teacher collaboration; sufficient budgetary support, supplies, and personnel; and continuing professional-development opportunities aligned with the goals of the service-delivery model.

LEVELS OF INTERVENTION

We have developed two kinds of interventions to address the performance gap, the gap between what students are expected to do and what students are able to do.

1. *Teacher-focused interventions* are directed at how teachers think about, adapt, and present their critical content in “learner-friendly” fashion.
2. *Student-focused interventions* are designed to provide the skills and strategies students need to learn the content.

We have concluded that both types of interventions are needed if students, especially low-achieving students, are to succeed on state assessment tests and demonstrate real-world content literacy—fluent use of listening, speaking, reading, and writing skills. To ensure that students attain

* Deshler, D.D., Schumaker, J.B., Lenz, B.K., Bulgren, J.A., Hock, M.F., Knight, J., & Ehren, B.J. (2002). Student success: Validated interventions + service delivery systems + professional development programs. *Stratenotes*, 10(8), 1-5

$$\text{Student Success} = \text{Validated Interventions} + \text{Service-Delivery Systems} + \text{Professional-Development Programs}$$

content literacy and learn subject-matter content, teachers can intervene at five levels.

Level 1. General education teachers present content in “learner-friendly” ways. Teachers compensate for limited levels of literacy by modifying curriculum and teaching methods to promote understanding and mastery. The interventions at this level are designed to benefit all students, making it easier for teachers to embrace their use.

Level 2. Interventions focus on directly teaching students the strategies they need to successfully learn the content. Teachers embed strategy instruction in core curriculum courses through direct explanation, modeling, and required use on assignments. By teaching students the strategies that are relevant to their courses, teachers shift their emphasis, in part, from learning course content to acquiring learning skills.

Level 3. Students receive specialized, inten-

sive instruction from someone other than the general education teacher. They learn to use a broad array of learning strategies that they can apply to a variety of tasks in multiple settings. To ensure that the strategies students learn are central to meeting the demands in a classroom, support personnel and general education teachers must work together closely.

Level 4. Students learn content-literacy skills and strategies through specialized, direct, and intensive instruction in listening, speaking, reading, and writing skills. Reading specialists and special education teachers work together to develop intensive and coordinated instructional experiences designed to address severe literacy deficits.

Level 5. Students with underlying language disorders learn the linguistic, meta-linguistic, and meta-cognitive underpinnings they need to acquire the necessary content skills and strategies.

Content Enhancement Routines are examples of Level 1 interventions. These routines are sets of inclusive teaching practices that help teachers carefully organize and present critical information in such a way that students identify, organize, comprehend, and recall it. Our research has validated three types of Content Enhancement Routines: organizing routines, understanding routines, and recall routines.

Example: A teacher might use an understanding routine, the *Concept Mastery Routine*, to teach students the concept of democracy by

- brainstorming what students already know about democracy
- outlining the characteristics that are always, sometimes, and never present in a democracy
- providing examples and nonexamples of democracy
- summarizing democracy in a definition.

A 1988 study found that mean test scores

for students with learning disabilities improved from 60 percent to 71 percent when the routine was used. Mean scores for students without LD increased from 72 percent to 87 percent.

The **Learning Strategies Curriculum** has emerged from our decades of research into Level 3 interventions. When students are taught these strategies in a systematic, intensive fashion, they demonstrate gains that enable them to perform at or near grade level.

The Learning Strategies Curriculum encompasses strategies for acquiring information from the printed word, strategies for organizing and memorizing information, strategies for solving math problems, and strategies for expressing information in writing (including on tests).

Studies have shown that secondary students with learning disabilities who learn writing strategies are able to write at levels comparable to or higher than those of their peers without learning disabilities.

Current Realities

At this level, speech pathologists deliver one-on-one or small-group curriculum-relevant language therapy in collaboration with other support personnel teaching literacy skills.

SERVICE-DELIVERY MODEL

Because the five-level Content Literacy Continuum is comprehensive and involves several settings and educators, a well-designed and coordinated service-delivery system must be in place. The service-delivery system designed to provide this array of services is called the Supported Inclusion Model. In this model, many students with learning disabilities are enrolled in general education classes while their work in those classes is supported through a variety of mechanisms. The system consists of three components: individualized assessment and personalized plans, general education classroom instruction, and intensive personalized instruction.

Individualized assessment and personalized plans. In this component, an accurate portrait of a student's skills and abilities is obtained through assessing curriculum-based measures of a student's strengths and weaknesses; teacher, parent, and student reports; and student products. The general education settings the student will encounter are assessed to determine what demands are inherent in those settings. Based on these assessments, the student and his or her teachers work together to develop a personalized education plan.

General education classroom instruction. The general education teacher takes a central role as both the planner and the mediator of learning. The teacher carefully organizes and transforms the content into a form that is "learner friendly" before presenting that content using Content Enhancement Routines. In addition, the teacher considers the strategy or strategies that students need to learn the content and teaches those strategies to them while simultaneously teaching the content. The general education teacher creates a "learning apprenticeship" experience in which the teacher

acts as the expert and students are the novices. The teacher explains and models how to learn the content, and the students imitate the expert's models. All students are involved in the apprenticeship in a very meaningful way. The outcome of the apprenticeship is students who not only know and understand information but who also can learn information on their own.

Intensive personalized instruction. This component, in which Level 3 through Level 5 interventions take place, is carried out using Academic Achievement Centers. All students, including normal achievers and those with disabilities or low academic achievement, can receive the personalized services that they require in these centers.

Instruction in these centers takes place in three ways:

- *Small instructional groups*, which may gather for intensive work on a complex strategy or to receive additional instruction on strategies being taught in their general education classes, can be organized for a relatively short period.
- *Strategic tutoring* is an instructional process in which the expert learner (the teacher) teaches novice learners strategies while tutoring the subject-matter content. Strategic tutoring is different from traditional tutoring in that it is based on the apprenticeship notion and on teaching students strategies that they can apply both to the task at hand and to similar future tasks.
- During *peer tutoring*, students instruct other students. The peer-tutoring structure most appropriate for Academic Achievement Cen-

Students become actively involved in the learning process. They think, listen, speak, and write throughout instruction. They learn how to find structure within pieces of information. They learn how to distinguish important from less important information and how to connect new information to previously learned information.

Academic Achievement Centers are not the same as traditional resource rooms. They are not restricted to students with special education needs. They are staffed by a variety of professionals, including general educators and special educators, as well as by adult and student volunteers. They are open before and after school as well as during school hours to afford students optimal access to the support they need to master the skills and content and produce the products required for success in

general education classrooms.

One of the most significant outcomes of a well-designed tutoring program is that it frees special education teachers from the role of academic tutoring. A cadre of well-trained adult and peer tutors can enable special education teachers to invest their time and expertise in teaching skills and strategies—the very thing they are trained to do and that can best help students become independent learners and performers in content classes.

ters is one in which students pair up and one student tutors the other outside the general education setting.

PROFESSIONAL-DEVELOPMENT PROGRAMS

For the service-delivery model to be successful, continuing professional-development opportunities aligned with its goals must be available. These opportunities must be focused on teaching teachers how to use research-based practices that have been shown to affect the performance of students. Not only must a larger proportion of funds be focused on changing instructional practice, these funds must be focused on instituting research-based practices and programs.

Professional-development programs must be carefully structured with the goal being to bridge the gap between research and practice—to make validated interventions available to teachers in a way that will ensure their long-term use for the benefit of students. Professional development must be viewed as a continuous process in which everyone in the school engages and must involve at least four phases:

1. initiation (to give basic information to potential implementers to help them determine the degree of appropriateness and alignment between the attributes of an innovation and existing instructional needs)
2. learning and implementation (to give in-depth explanations, models, practice, and feedback)
3. follow-up support (to support implementa-

tion efforts through coaching, troubleshooting, support-team meetings, and implementation refinement)

4. maintenance (to routinize use of the innovation within the system)

Teachers must be given the materials they need to support their instruction. Those materials need to be organized and ready to use. Additionally, teachers must be afforded opportunities to meet regularly as support teams.

Furthermore, professional-development sessions must be conducted within a new paradigm that is founded on the notion of Partnership Learning, a method for planning and delivering professional-development sessions in which meaningful conversations take a central role.

WHAT CAN I DO?

As a school administrator, you can put the weight of your office behind the student success formula. Your support is key to the successful implementation of each component of the formula. The effectiveness of the student success formula relies on a foundation of strong and active administrative support.

- You can ensure that funds are appropriated for the staff who will be involved in the service-delivery model.
- You can ensure that funds are appropriated for the professional-development program that will be required.
- You can seek and obtain funds from a variety

Current Realities

of sources (state, district, grants) and restructure and set priorities for how your budget is spent.

- You can ensure that the professional-development activities offered to your teachers focus on interventions that have been proven effective through research.
- You can structure the professional-development sequence to ensure sustained use of new interventions over time.
- You can attend all professional-development activities side-by-side with your teachers.
- You can be an active instructional leader and demonstrate your commitment by visiting classrooms, taking part in support-team meetings, insisting that interventions be implemented, and ensuring that each staff member is accountable for student outcomes.
- You can help staff clarify their roles in the service-delivery system.
- You can document policies and procedures that formally ingrain the service-delivery system throughout your school.

Effective Instruction for English Language Learners

Since 1978, researchers at the University of Kansas Center for Research on Learning (KUCRL) have investigated the type of instruction needed to ensure that students are ready for and can succeed in college or other demanding postsecondary educational options. Our studies have addressed many educational problems faced by diverse learners in different types of classrooms and schools. Our target student populations include students with disabilities and, increasingly, English language learners (ELLs).

We have found that our best results—the largest gains in student achievement—are obtained when we adhere to six rigorous research principles we have established for our work and the educational interventions we develop:

1. The intervention must enable students to successfully compete in challenging courses. That is, it must be relevant to their coursework.
2. The intervention must be easy to use and easy to integrate into ongoing classroom routines.
3. The intervention must lead to gains for the diversity of students found in most secondary classrooms. Low-, average-, and high-achieving students *all* must benefit in some way.
4. The intervention must actively engage students as partners in the learning process.
5. The intervention must require teachers to regularly monitor student progress so instructional adjustments can be made quickly.
6. The intervention must be highly valued by both students and teachers.

When these six conditions are met, teachers and students consistently use the intervention, and large gains in students' academic achievement can be realized.

These research principles have resulted in

interventions that help close the performance gap, the gap between what adolescents are expected to be able to accomplish in school and what they are able to do. Collectively, these interventions comprise the Strategic Instruction Model (SIM), a research-validated literacy program that helps adolescents learn how to learn, providing a means for them to achieve independence and success. In addition, lessons learned through our research efforts have led KUCRL researchers to describe a continuum encompassing the types of instruction needed to ensure academic success for all students. This continuum, called the Content Literacy Continuum (CLC), allows some students to receive gradually more intensive, systematic, and explicit instruction of content, strategies, and skills as their needs dictate.

RESEARCH ON EFFECTIVE INSTRUCTION FOR ENGLISH LANGUAGE LEARNERS

English language learners (ELLs) constitute the fastest growing portion of the K-12 student population. Many SIM instructional interventions align with the research-based practices recommended for improving academic outcomes for these students. Below is a synopsis of the significant findings from five reports that identify effective research-based practices for use with ELLs. After we summarize the practices described in these reports, we identify SIM instructional interventions that align with these research findings.

Study 1: Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language Minority Children and Youth (August and Shanahan, 2006)

Significant findings:

- Instruction that focuses on the **key compo-**

Current Realities

nents of reading (phonics, fluency, vocabulary, text comprehension) has clear benefits.

- In addition, **oral proficiency** in English is critical for reading and writing proficiency.
- Oral proficiency and literacy in the **first language** can be used to facilitate literacy development in English.
- **Individual differences** contribute significantly to English literacy development.
- Most **assessments** do a poor job of gauging individual strengths and weaknesses.

Study 2: Cross Cutting Themes and Future Directions (Snow, 2006)

Significant findings:

- The **reading comprehension** performance of language minority students falls well below that of their native speaking peers.
- **Vocabulary knowledge** can be enhanced by the use of vocabulary from the first language.
- Many instructional components known to be effective with **monolingual English** speakers also appear to be effective with ELLs.
- Instructional practices found to be effective in **special education** programs seem likely to be effective with ELLs.

Study 3: What Does Research Say about Effective Practices for English Learners? (Coleman and Goldenberg, 2009)

Significant findings:

- English oral language is best taught through **explicit, direct instruction** and interactive approaches.
- **Interactive approaches** provide opportunities for authentic communication.
- **Daily oral English language instruction** that targets language acquisition is recommended, about 45 minutes per day.
- Students need to learn **expressive** as well as **receptive** language.
- Grouping by **proficiency level** for English lan-

guage development instruction may be helpful.

- **Academic language**—not just conversational language—should be emphasized.

Study 4: The Critical Role of Vocabulary Development for English Language Learners (August, Carlo, Dressler, & Snow, 2005)

Significant findings:

- Students should be involved in **conversations about words**.
- Instructors should provide **definitions and contextual information** about words.
- Students need **multiple exposures** to new vocabulary.
- Instructors should teach students **word analysis skills**.
- Using knowledge of **cognates** benefits English language learners.
- Instructors must make sure ELLs know the meaning of **basic words**.
- Providing **extensive review and practice** opportunities helps student achievement.

Study 5: Effects of Instructional Conversations and Literature Logs on Limited- and Fluent-English-Proficient Students' Story Comprehension and Thematic Understanding (Saunders and Goldenberg, 1999)

Significant findings:

- Students should be involved in instructional **conversations about text**.
- Instructors should have students write **literature logs**.
- Students need to be taught **reading comprehension strategies**.
- Teacher **read alouds** are beneficial.

ALIGNING SIM INTERVENTIONS WITH EFFECTIVE RESEARCH-BASED INSTRUCTIONAL PRACTICES FOR ELL STUDENTS

The following table identifies SIM interventions that align with the recommendations for effective instructional practices for ELL students identified in the studies described in the previous section.

Research-Based Practice	SIM Intervention or Program
Emphasis on key components of reading (August & Shanahan, 2006)	The Fusion Reading program includes all key components, and the SIM Learning Strategies Curriculum addresses main reading components.
Explicit, direct instruction (Coleman & Goldenberg, 2009)	SIM is one of the most highly regarded evidence-based explicit/direct instruction models in the field.
Interactive approach (Coleman & Goldenberg, 2009)	All SIM interventions and programs—including Fusion Reading—are designed as highly interactive programs that blend teacher/student interaction with explicit instruction.
Daily oral English language instruction (Coleman & Goldenberg, 2009)	Fusion Reading supports multiple daily oral language activities in reading and vocabulary. Content Enhancement Routines structure extensive oral language in discussion about critical concepts and course or unit questions.
Expressive and receptive language (Coleman & Goldenberg, 2009)	Fusion Reading's <i>Vocabulary Strategy</i> and the <i>Vocabulary LINCing Routine</i> from the Content Enhancement Routine series focus on both receptive and expressive vocabulary instruction.
Definitions and contextual information about words (August et al., 2005)	SIM interventions that address this practice include Fusion Reading's <i>Vocabulary Strategy</i> and the <i>Vocabulary LINCing Routine</i> from the Content Enhancement Routine series.
Multiple exposures to new vocabulary (August et al., 2005)	Fusion Reading incorporates this practice through its <i>Vocabulary Strategy</i> and class discussion of vocabulary during all reading activities. Within the Content Enhancement Routine series, <i>Concept Mastery</i> , <i>Concept Anchoring</i> , and <i>Concept Comparison</i> have a heavy focus on vocabulary.
Word analysis skill instruction (August et al., 2005)	Fusion Reading and the <i>Word Identification Strategy</i> from the Learning Strategies Curriculum teach word analysis skills.
Knowledge of cognates (August et al., 2005)	The SIM interventions that explicitly address this practice are the <i>Word Mapping Strategy</i> from the Learning Strategies Curriculum, Fusion Reading's <i>Vocabulary Strategy</i> and Thinking Reading activity, and Content Enhancement's <i>Vocabulary LINCing Routine</i> .

Current Realities

Basic words instruction (August et al., 2005)	Fusion Reading's <i>Vocabulary Strategy</i> and <i>Bridging Strategy</i> teach basic words as do the <i>Word Mapping Strategy</i> and <i>Word Identification Strategy</i> from the Learning Strategies Curriculum.
Extensive review and practice opportunities (August et al., 2005)	All SIM interventions include extensive guided, partner, and individual practice with elaborated feedback from teachers
Student involvement in conversations about text (Saunders & Goldenberg, 1999)	Fusion Reading's Thinking Reading and Book Study activities as well as all seven strategies in the Fusion Reading curriculum involve students in conversations about text. All Learning Strategies and Content Enhancement Routines support extensive conversation about text and concepts.
Student literature logs (Saunders & Goldenberg, 1999)	Fusion Reading's Book Study activity and <i>Vocabulary Strategy</i> require students to write literature logs.
Reading comprehension strategy instruction (Saunders & Goldenberg, 1999)	Multiple reading strategies are built in to the Fusion Reading program. The Learning Strategies Curriculum features five specific reading strategies. Two Content Enhancement Routines—the <i>Survey Routine</i> and the <i>ORDER Routine</i> — are specifically designed to improve reading comprehension.
Teacher read alouds (Saunders & Goldenberg, 1999)	Fusion Reading incorporates daily teacher read-aloud activities that blend student and teacher voice and model expert reader skills.

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Strategic Instruction

Strategic instruction is an approach that includes **explicit planning**. By that we mean planning that is focused on standards, on critical content, on the diversity of learners in the classroom, and on process. Strategic instruction means thinking differently about how we select and deliver content. See page 24 for a description of our SMARTER Planning process.

Explicit teaching is inherent in strategic instruction. The Strategic Instruction Model's *Content Enhancement Routines* help teachers present content to academically diverse classes in ways that enable all students to understand and remember the information. The routines incorporate a "cue-do-review" teaching sequence that promotes direct and explicit instruction. See page 31 for an overview of the SIM Content Enhancement Routines. More detailed information about the routines, including descriptions and examples, begins on page 41.

Students use the SIM *Learning Strategies* to become more active learners. The strategies teach students how to learn and how to use what they have learned to solve problems and be successful. In many cases, strategy instruction takes the form of an eight-stage process that progresses naturally from describing the strategy through modeling through many forms of practice through promoting generalization of strategy use to multiple settings. See page 32 for an overview of the SIM Learning Strategies and page 54 for more detailed information, including sample summaries of supporting research

A *teaming approach* is an important part of successful strategic instruction. Our research has shown repeatedly that student performance increases most when teachers effectively plan and work with others on behalf of at-risk students.

Creating a **strategic environment** is essential for effective strategic instruction. Our *Content Literacy Continuum* is a five-level framework for improving adolescent literacy efforts schoolwide. See page 30 for a CLC overview. More detailed information begins on page 87.

EXPLICIT PLANNING

- Focused on standards
- Focused on critical content
- Focused on diversity
- Focused on process

EXPLICIT TEACHING

- Teaching Routines
- Learning Strategies
- Teaming Approach

STRATEGIC ENVIRONMENT

- Content Literacy Continuum
- Shared vision
- Shared responsibility
- Shared outcomes
- Shared accountability

SMARTER Planning

Considering Curriculum in Light of Standards-Based Reform

by Keith Lenz, Senior Research Scientist, Center for Research on Learning*

Building on what we know about curriculum, teaching, and diversity, teachers must approach planning in smarter ways. We believe that “smarter” planning involves three components: content, process, and integration. This article will focus on the first component, content, and the related requirement to think differently about how we select content to reflect learning expectations specified in state and local standards. We will use the image of a curriculum “pie” and slices of that pie to consider curriculum in light of standards-based reform.

We can begin to examine what content should be emphasized by thinking about the continuum represented in Figure 1. The many dots in this figure represent all known information about social studies, a field that incorporates a vast amount of information covering the entire development of all the civilizations. Curriculum developers group this information into disciplines such as history, civics, geography, etc., to focus learning. Within the discipline of history, courses focusing on the history of the world or on specific countries (e.g., History of the United States or History of Canada) are created. The first outer circle in the field of dots marks off and groups what is related to the field of history. Moving inward, the next circle represents the set of information that we could group as related primarily to United States history. However, because we cannot teach everything about the history of the United States, as we move inward still, the next circle represents information about the United States that might be included in a high school history class. A United States history course taught in a middle school would require

another inward and smaller circle, and a course taught in an elementary classroom would require yet another inward and even smaller circle. The point here is that because of the sheer quantity of information that exists, we are constantly required to determine what to include in a course.

The question for historians and curriculum makers, however, is what makes United States history worth knowing. We create courses to help us teach important sets of information linked by big ideas that organize and help us understand a body of knowledge thought to be important. Courses that are considered to be most important are “required” courses and all students must take these courses. Elective courses are judged as important for only some students and enrollment is optional or “elective.”

Now let’s take a look at how we can think about course design. We use a circle (Figure 2) to cluster the information that would be included in a course. As we consider the information within this circle, we need to remember that a course is based on or revolves around a set of critical ideas, represented by stars, that define how the larger set of information should be organized and understood. The figure shows these ideas as a set of stars clus-

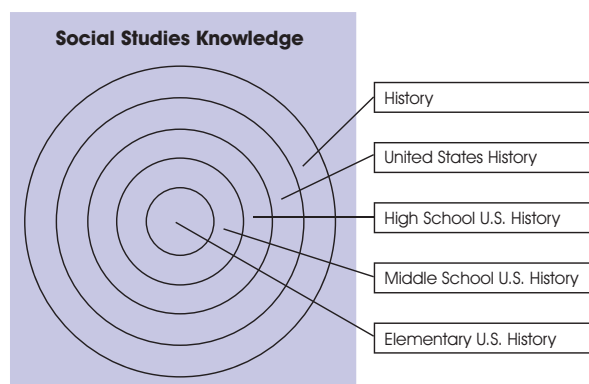


Figure 1

* Lenz, K. (2001). SMARTER planning: Considering curriculum in light of standards-based reform. *Stratenotes*, 9(6), 1-5.

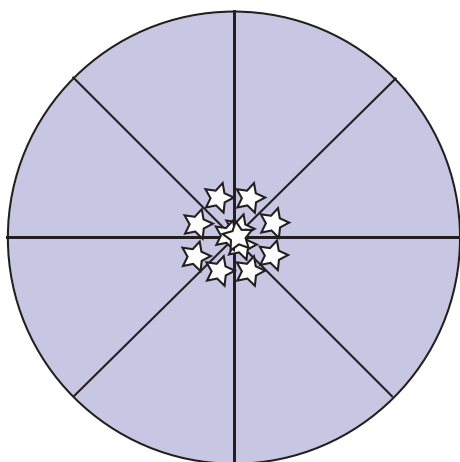


Figure 2

tered at the center or core of the circle. These ideas should be drawn from content area standards set at the national, state, district, school, department, or classroom level. They represent what is essential for all students to learn. However, more importantly, they must represent what is critical for *all* students to know in our society, and they must provide an anchor for all the other information that is presented in the various units in a course. In addition, decisions related to instruction, activities, and evaluation must revolve around ensuring mastery of this critical information for all students.

THE UNIT: A SLICE OF THE COURSE PIE

Selecting critical information. Using the image of a pie to represent the curriculum of a course, we can then extend our thinking about curriculum design to the unit level. Figure 2 shows the pie sliced into pieces that may be thought of as units in a course. At this level, we can begin to think in more detail about how we will organize curriculum experiences for students. The point or narrowest part of the slice represents the critical content that all students should be expected to know and demonstrate. At the very center of this narrow area, a star is used to indicate that the content in this unit that is targeted for all students should be selected based on the degree to which it supports understanding of a critical idea, concept, or, as

Wiggins and McTighe (1998) propose, an “enduring understanding” that rests at the heart of the discipline.

If all students should be able to master this content, what percentage of the content do you think this can be? It is important to remember that as classes become more diverse, it is going to take us longer to teach the same content each year. Therefore, it is important to select the set of concepts that helps organize the rest of the information in the unit and then to identify the supporting content that is absolutely critical to unlocking the discipline and the rest of the content included in the unit. The critical ideas and content in the narrowest portion of the slice should be thought of as the content that unlocks understanding of the larger body of knowledge at the broader end of the slice. As indicated in Figure 3, the information included at the top, narrow part of the slice has the potential for having the highest negative effect on society if students do not acquire and use this knowledge. However, each teacher must determine how much of the content this represents. As an example, in the figure, 10 percent of the content is designated as critical. The part of content designated as critical may be relatively small because a unit may be constructed around only one or two critical ideas. We could expect student work that demonstrates mastery of the critical ideas and content at this level to be evaluated as “C” work, the average or expected level of performance in a secondary school curriculum.

In a unit on the Causes of the U.S. Civil War, a critical idea that unlocks understanding might be the concept of “sectionalism”—conflicts that arose because of differences between geographical sections of the country. If a teacher believes that the concept of “sectionalism” is an important idea that is at the very heart of understanding discord between different parts of the country, then this is a critical idea to guide instruction of other content in this unit. Therefore, what must all students know about sectionalism as a cause of the U.S. Civil War?

Key Components

Prioritizing content for instruction in high school core curriculum courses

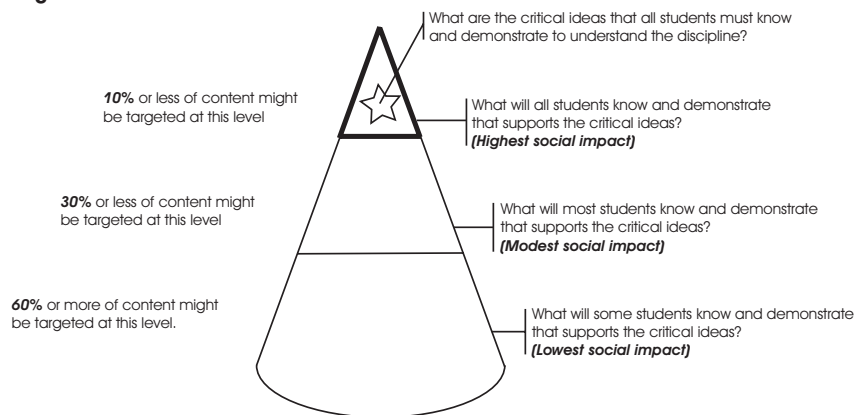


Figure 3

Figure 4 illustrates how content related to a unit on the Causes of the U.S. Civil War might be sorted out. The middle area of the unit slice represents what most students should know and demonstrate about the critical idea represented by the star located at the top of the slice. The percentage of information at this level of the pie increases but is still limited because we want most students to acquire this information. We judge it to be important, but not critical. We could expect the work of students that meets the stated mastery criteria for the critical ideas and content at both the top part and the middle part of the curriculum pie to be evaluated as “B” work, above average or greater than expected level of performance in a high

school curriculum.

The broadest, lowest area of the pie represents the content in a unit that some students should know and demonstrate. The quantity of information at this level is the most extensive and, to a large degree, is highly personalized. This area of the pie does not represent information that is unimportant or trivial; it may be interesting information, and it might ignite the imagination of some students. As such, the information here may be helpful to students doing research projects or reports or for students who want to extend their learning to a more detailed level. However, our expectations as teachers should be that, since this content is not essential to understanding the big ideas and

Prioritized content for “Causes of the U.S. Civil War”

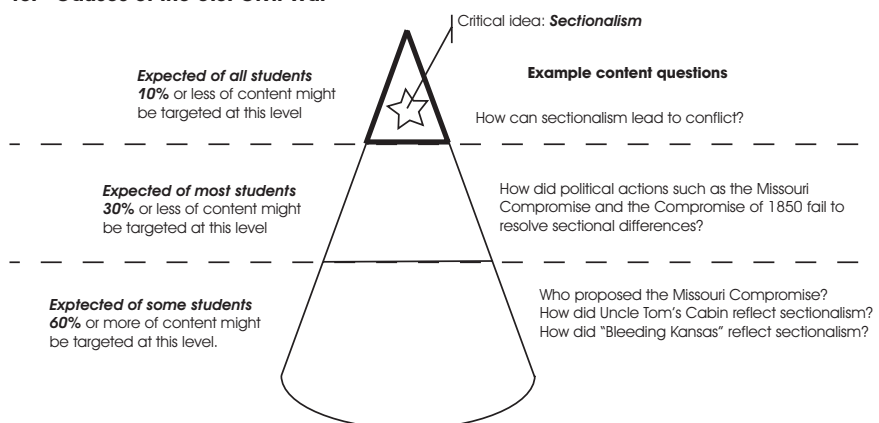


Figure 4

supporting information of a unit, smaller amounts of instructional time should be devoted to it than to the critical ideas and information of the course. Similarly, it should not occupy a significant share of the assessment of student mastery of the unit content. We would expect the work of students meeting the stated mastery criteria for the critical ideas and content at all three levels of the pie to be evaluated as “A” work, well above average or the highest level of expected performance in a high school curriculum.

It is important to recognize that although we cannot expect all or even most students to become proficient at this level, all students should have access and opportunities to connect with information at this level. The information here may prompt some students to want to launch an investigation or explore a critical idea in the unit. An author may become known; a local issue may take on personal importance; a career or lifelong interest may take shape. In other words, the information in this area of the pie is worth knowing and all students should have an opportunity to know it. However, in terms of planning for instruction and assessment in the real world of limited time and resources, information at this level of the curriculum slice is not critical for understanding the important ideas of a unit. All students should have the opportunity to learn it; not all students should be held accountable for it in terms of passing or failing.

However you choose to think about selecting critical content, it remains as an essential step in planning and an essential process for including all students in learning. If choices about critical content are not made at this early stage, you run the risk that instructional time, focus, and energy will evaporate as you try to cover everything. And in trying to cover everything, you run the risk that instruction and learning will be superficial for all students. This is not an effective way to include all students in learning.

Ways of thinking. In addition to prioritizing

content for purposes of instruction and assessment, it is important to think about the different ways students will be expected to think about and use the knowledge they will be learning. These ways of thinking are often discussed in preservice texts in the context of Bloom’s taxonomy of cognitive objectives (see for example Sadker & Sadker, 1999). We have found in talking to teachers over the years that, in practice, they find the six levels of Bloom’s taxonomy cumbersome and that the levels overlap a great deal. Consequently, we have consolidated the taxonomy of cognitive objectives to three levels: acquisition, manipulation, and generalization. Acquisition corresponds to Bloom’s levels of knowledge and comprehension; manipulation corresponds to application, analysis, and synthesis; and generalization corresponds to evaluation.

Figure 5 applies these ways of knowing to the unit slice we have been discussing. The white interior area of the slice represents student performances demonstrating student acquisition of facts and concepts. Moving outward from the center area is the next layer, shaded blue, which represents student manipulation of information (e.g., compare/contrast, cause/effect). The outermost layer, shaded gray, represents student performances where there is generalization of content knowledge so that it may be applied and used. Note that all three ways of thinking—acquisition, manipulation, and generalization—are addressed in all three content sections of the slice. At the top of the unit slice, the important ideas and information of the unit may comprise a small portion of the total amount of content information to be learned, but all students will be expected to successfully use cognitive processes of acquisition, manipulation, and generalization to process that knowledge. Acquisition of the content knowledge in this top slice as well as manipulation and generalization in using this content will result in students attaining a passing grade (commonly associated with a “C” performance).

Key Components

Assessment focus is on the type of outcome expected

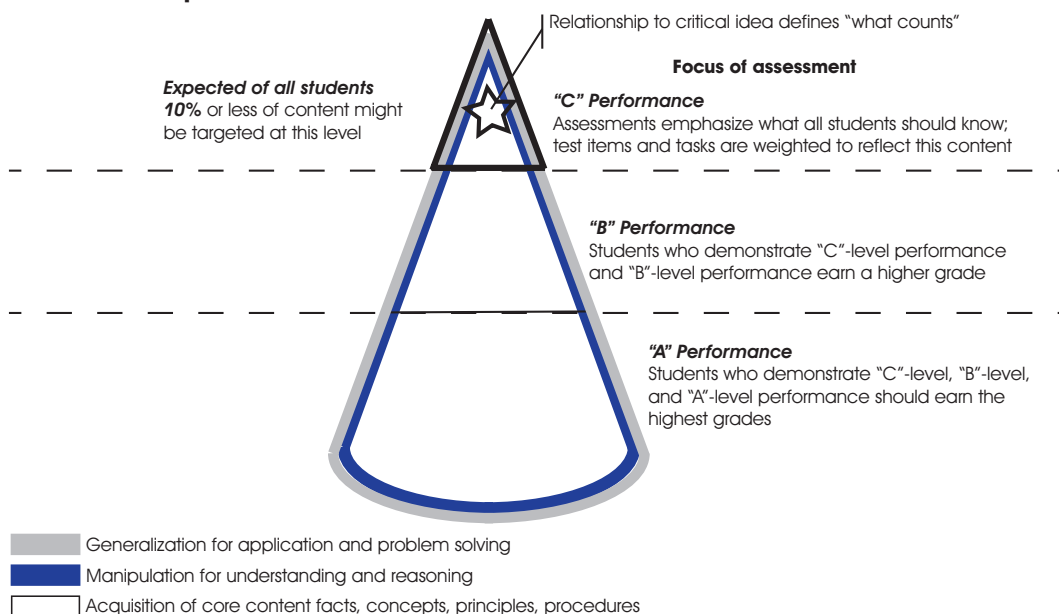


Figure 5

ASSESSING COMPETENCE

Standards-based reform requires that we think about what we teach (the content standards) and how we want students to demonstrate competence (performance standards). The discussion up to this point has focused on what to teach and how to make decisions about where to focus instructional time and resources. However, we also must think about how we want students to demonstrate what they have learned and how to develop assessment tasks.

Figure 5 shows how the slice of course pie can be divided top to bottom indicating how content is prioritized and how it can be divided into layers from the inside out to indicate how we can develop expectations about student performance in manipulating content.

The white, innermost area within the top triangle section of the unit slice represents the information that we need students to know so other learning can occur (e.g., What is democracy? What is a simple sentence? How do you measure a room? What is a mammal?). At this level, teachers

assess whether students have *acquired* knowledge of facts, concepts, principles, and procedures. In assessments of this type, students may be asked to identify, state, define, or summarize the information they have acquired. This allows teachers to determine whether students know facts and understand concepts, principles, and procedures and whether they comprehend the information at a level that allows them to explain or summarize the information in their own words.

Moving outward through the layers of performance expectations, the next layer (blue) indicates expectations related to how we want students to manipulate the content core. This layer represents expectations regarding how we want students to think about and explore information (e.g., Why do people value democracy? How are simple and compound sentences alike and different? How can measuring wrong affect construction costs? How are mammals different from birds?). At this level, teachers assess whether students have acquired an ability to use or *manipulate* the information that they have acquired. In assessments of this type,

students may be asked to analyze the characteristics of concepts, compare or contrast information, or cluster information based on similarities of characteristics. They also may be asked to apply information they have learned in the content area. In short, the students will be asked to manipulate or use the information they have acquired.

Moving outward again to the outermost layer (gray), this layer indicates teacher expectations related to application of information to the real world in the form of novel problem solving and generalization (e.g., How has creating a democracy affected the people of Russia? Write a letter to persuade the mayor about something that is important to you. What kind of apartment can you afford in this neighborhood on the salary of the job that you plan to get when you graduate? How will recycling affect your taxes and environment over the next 10 years?). At this level, teachers may ask students to use the information they have acquired in new situations, that is, to *generalize* their knowledge to new challenges. This may involve creating new solutions or plans, solving ill-defined problems, evaluating materials or methods, making decisions, persuading others of their opinions, or inferring patterns.

To summarize, using Figure 5 can help you visualize how to select and prioritize content students will learn. It also can help you visualize what your expectations are about how students will process content. For each level of content, from the essential ideas and information all students must master to the information and ideas that are less essential, all students will be expected to process information at all three layers of acquisition, manipulation, and generalization. Because the information selected for assessment will not be limited to any one type of content information (i.e. from any one level of prioritized content), instruction should result in all students being able to meet performance standards for all three types of knowledge.

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Content Literacy Continuum Overview

The **Content Literacy Continuum** focuses on helping secondary schools develop and sustain comprehensive and integrated literacy programs. CLC consists of five increasingly intense levels of support for adolescent literacy efforts.

LEVEL 1: CONTENT MASTERY

The goal of this level is for students to learn critical content in core curriculum classes regardless of literacy levels.

LEVEL 2: EMBEDDED STRATEGY INSTRUCTION

The goal at this level is to give students opportunities to learn and apply a set of powerful learning strategies for improving literacy across core curriculum classes to learn critical content.

LEVEL 3: EXPLICIT STRATEGY INSTRUCTION

At this level, students who need more intensive strategy instruction than can be provided through embedded instruction at Level 2 receive more intensive and explicit strategy instruction.



LEVEL 4: INTENSIVE SKILL DEVELOPMENT

At this level, students develop foundational decoding, fluency, and comprehension skills through specialized, direct, and intensive instruction.

LEVEL 5: INTENSIVE CLINICAL INTERVENTION

At this level, students with underlying language disorders learn the linguistic, related cognitive, metalinguistic, and metacognitive underpinnings they need to acquire content literacy skills and strategies.

Learn more about the Content Literacy Continuum, beginning on page 87.

What is a Content Enhancement Routine?

Content Enhancement Routines are used by teachers to teach curriculum content to academically diverse classes in ways that enable *all* students to understand and remember key information. Content enhancement is an instructional method that relies on using powerful teaching devices to organize and present curriculum content in an understandable and easy-to-learn manner. Teachers identify content that they deem to be most critical and teach it using a powerfully designed teaching routine that actively engages students with the content.

The University of Kansas Center for Research on Learning Content Enhancement Routine series consists of routines for planning and leading learning; for exploring text, topics, and details; for teaching concepts; and for increasing student performance.

For more information about the routines listed here, including summaries of supporting research, see Content Enhancement Instruction, beginning on page 41.

TEACHING ROUTINES

FOR PLANNING & LEADING LEARNING

- Course Organizer Routine
- Unit Organizer Routine
- Lesson Organizer Routine

TEACHING ROUTINES

FOR EXPLORING TEXT, TOPICS, & DETAILS

- Clarifying Routine
- Framing Routine
- Survey Routine
- Vocabulary LINCing Routine

TEACHING ROUTINES

FOR TEACHING CONCEPTS

- Concept Mastery Routine
- Concept Anchoring Routine
- Concept Comparison Routine

TEACHING ROUTINES

FOR INCREASING STUDENT PERFORMANCE

- Recall Enhancement Routine
- Question Exploration Routine
- Quality Assignment Routine
- ORDER Routine

What is a Learning Strategy?

Learning strategies are used by students to help them understand information and solve problems. A learning strategy is a person's approach to learning and using information. Students who do not know or use good learning strategies often learn *passively* and ultimately fail in school. Learning strategy instruction focuses on making the students more *active learners* by teaching them *how to learn* and *how to use* what they have learned to solve problems and be successful.

The University of Kansas Center for Research on Learning has developed an array of learning strategies to help students meet the challenges they face in their courses. For more information about the strategies listed here, including summaries of supporting research, see Strategy Instruction, beginning on page 54.

STRATEGIES RELATED TO READING

- Inference Strategy
- Fundamentals of Paraphrasing and Summarizing
- Paraphrasing Strategy
- Self-Questioning Strategy
- Visual Imagery Strategy
- Word Identification Strategy

READING PROGRAMS

- Fusion Reading
- STRUCTURE Your Reading

STRATEGIES RELATED TO STORING & REMEMBERING INFORMATION

- FIRST-Letter Mnemonic Strategy
- Listening and Note-Taking
- Paired Associates Strategy
- LINC'S Vocabulary Strategy
- Word Mapping

STRATEGIES RELATED TO EXPRESSING INFORMATION

- EDIT Strategy
- Fundamentals in the Sentence Writing Strategy
- Fundamentals in the Theme Writing Strategy
- Paragraph Writing Strategy
- Proficiency in the Sentence Writing Strategy

STRATEGIES RELATED TO DEMONSTRATING COMPETENCE

- Assignment Completion Strategy
- Essay Test-Taking Strategy
- Strategic Tutoring
- Test-Taking Strategy

STRATEGIES RELATED TO SOCIAL INTERACTION

- SLANT – A Starter Strategy for Class Participation
- Cooperative Thinking Strategies: THINK Strategy; LEARN Strategy; BUILD Strategy; SCORE Skills: Social Skills for Cooperative Groups; Teamwork Strategy
- Community Building Series: Focusing Together, Following Instructions Together, Organizing Together, Taking Notes Together, Talking Together

STRATEGIES RELATED TO MOTIVATION

- Self-Advocacy Strategy
- Possible Selves

STRATEGIES RELATED TO MATH

- Strategic Math Series: Addition Facts 0 to 9, Addition Facts 10 to 18, Addition with Regrouping, Subtraction Facts 0 to 9, Subtraction Facts 10 to 18, Subtraction with Regrouping, Multiplication Facts 0 to 81, Division Facts 0 to 81, Place Value

Why Are Teaming & Support Important?

Significantly altering the poor performance of underachieving students occurs *only* when teachers are well supported in their work *and* when teachers carefully team with others on behalf of those students who struggle to succeed.

SIM supports teachers in their extraordinarily challenging assignment of teaching academically diverse classes by providing a broad array of research-validated instructional methods and materials and accompanying professional development support services.

SUPPORTS FOR TEACHERS AND ADMINISTRATORS

- **SIM instructional manuals and support materials** help educators successfully use SIM with their students.
- KUCRL supports the work of members of the **SIM International Professional Development Network**, who provide professional development services to teachers, schools, and districts interested in the Strategic Instruction Model.
- **SIM regional and international professional development seminars** keep SIM professionals apprised of current research and new material releases.
- The Center's website, <http://kucrl.org>, is our central online hub for current information about our work and features links to the Strategic Instruction Model site, <http://sim.kucrl.org>, and the Content Literacy Continuum site, <http://clc.kucrl.org>.
- **Stratopedia** (<http://stratopedia.org>) offers technology solutions and support for SIM educators and researchers.
- The **SIM Facebook page** (<http://facebook.com/sim.kucrl>) is a place for educators to connect with each other and with Center. We

also maintain a **SIM Twitter account** (@StrateTweets) to encourage conversations with SIM educators.

KUCRL research has shown repeatedly that student performance increases most when teachers effectively plan and work with others on behalf of at-risk students. Instructional programs that are well coordinated across teachers with regard to what is taught and how instruction is provided have resulted in the greatest student achievement gains. Regrettably, most programs for underachieving adolescents are fragmented and not well orchestrated.

TEAMING: TEACHERS WITH TEACHERS

The **Collaborative Problem Solving** manual helps professionals who work as members of a team to establish or strengthen basic communication skills and incorporate those skills into a problem-solving process. The manual also covers partnership-building skills and how to apply pertinent instructional principles to academic, behavioral, and management decisions.

TEAMING: TEACHERS WITH STUDENTS

The **Learning Express-Ways Communication System** is a package of tools to help establish healthy communication patterns and build productive academic relationships within a classroom.

Surface Counseling is a problem-solving and decision-making process meant to be used primarily with youths who have day-to-day problems that may be resolved quickly through problem solving.

TEAMING: TEACHERS WITH PARENTS

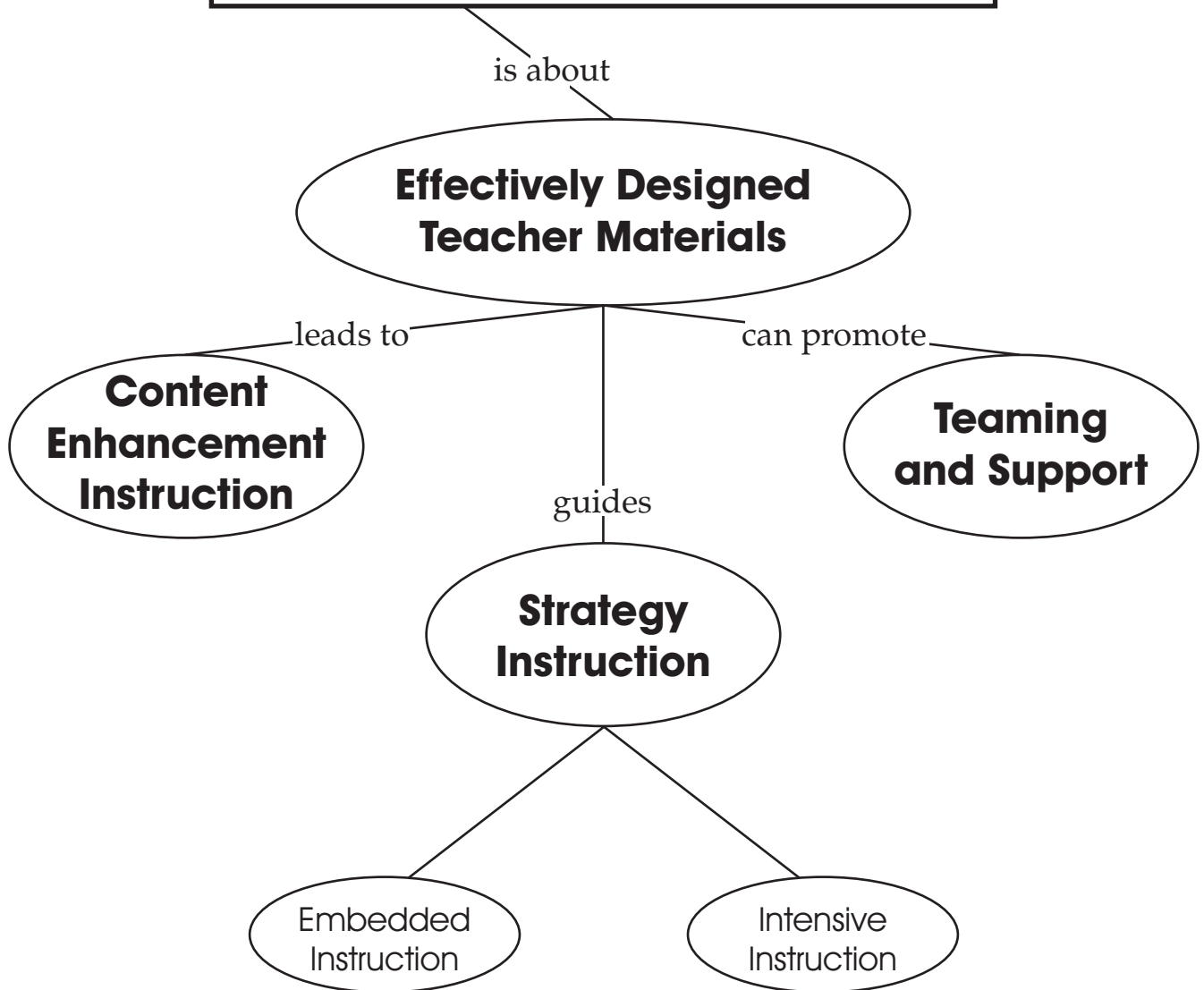
The **Progress Program** manual is a step-by-step guide to the use of the Daily Report Card Program, a tool for giving parents detailed, daily information about their child's behavior at school.



Instructional Components

Strategic Instruction Model

Instructional Components



Strategic Instruction Model

The **Strategic Instruction Model (SIM)** offers an integrated approach to addressing the challenges teachers face in today's classrooms and a framework for working toward meeting school reform goals and state standards. SIM encompasses teacher-focused interventions directed at how teachers think about, adapt, and present their critical content in a "learner-friendly" fashion; student-focused interventions designed to provide the skills and strategies students need to learn the content; and supporting programs that help provide a well-coordinated and well-orchestrated educational experience for students.

TEACHER-FOCUSED INTERVENTIONS: THE CONTENT ENHANCEMENT SERIES

Content Enhancement is a way of teaching an academically diverse group of students in which four conditions prevail:

1. Both group and individual needs are valued and met.
2. The integrity of the content is maintained.
3. Critical features of the content are selected and transformed in a way that promotes learning for *all* students.
4. Instruction is carried out in a partnership with students.

Some Content Enhancement Routines help teachers think about and organize content, then present it in such a way that students can see the organization. Others help teachers explain text, topics, and details. A third group helps teach complex concepts so students gain a deep understanding and develop a shared vocabulary for talking about important information. A final group of routines helps students complete work in the classroom.

All of the routines promote direct, explicit instruction. This type of instruction helps students who are struggling, but it also facilitates problem-

solving and critical thinking skills for students who are doing well in class.

STUDENT-FOCUSED INTERVENTIONS: THE LEARNING STRATEGIES CURRICULUM

The Learning Strategies Curriculum has the necessary breadth and depth to provide a well-designed scope and sequence of strategy instruction. The curriculum is divided into strands, or categories of skills.

One strand addresses how students acquire information. It includes strategies for learning how to paraphrase critical information, picture information to promote understanding and remembering, ask questions and make predictions about text information, and identify unknown words in text.

A second strand helps students study information once they acquire it. It includes strategies for developing mnemonics and other devices to aid memorization of facts as well as strategies for learning new vocabulary. These strategies help prepare students for tests.

A third strand helps students express themselves. It includes strategies to help students write sentences and paragraphs, monitor their work for errors, and confidently approach and take tests.

No single strategy is a panacea. For example, we have reading strategies that help students figure out what a word is, comprehend what they're reading, acquire vocabulary, and understand the structure of text. All of these strategies are essential for a well-integrated, balanced reading program. Likewise, an array of strategies in other areas is necessary for student success.

TEAMING AND SUPPORT

SIM includes an array of supporting programs and materials designed to improve communication and teaming both within the classroom and within the larger community. Materials in the form of books,

Instructional Components

CD-ROMs, and videotapes provide guidance for building learning communities, enhancing social skills, and improving a variety of skills for use in the classroom and in other group settings.

Use of these programs and materials supports an important goal: to avoid a fragmented educational experience for students. Teaming can help provide a sustained, well-coordinated, and well-orchestrated balance of curriculum content, skills, and strategies.

General education teachers and support teachers (special education, Title 1, etc.) both gain by working together to solve students' problems, but the person who will benefit most from their collaboration is the student they are trying to help.

The general education teacher brings expertise in a specific content area to their relationship, while the support teacher brings expertise in skills and strategies students need to succeed. The combined wisdom of these two areas of expertise can be a powerful force in the educational experience of students with learning difficulties.

The teaming equation is not complete without the addition of administrators, parents, physicians, counselors, coaches, and other individuals or agencies that have contact with the student in some way. Bringing this group into the teaming environment helps ensure a consistent message to the student as he or she continues to pursue academic success.

Content Enhancement Routines

The teaching routines described below have been successfully field tested in general education classrooms characterized by significant academic diversity. The classes contained students judged to be at risk for academic school failure as well as students judged to have learning disabilities. The research took place in public schools, primarily in middle and high school settings, and the routines were field tested by teachers. Research has demonstrated that consistent and explicit instruction and use of each routine is a key ingredient for instructional success.

The routines were designed for use during group instruction to help a teacher provide instruction more sensitive to the learning needs of individuals in the group. A combination of instructional models involving general education teachers and special education teachers, individually and collaboratively, have been successfully tested. All of the routines are taught using a standard set of instructional procedures, which define the necessary instructional conditions needed regardless of where the routine is used.

Each routine is associated with a graphic device that teachers and students complete together to organize important content in an understandable and easy-to-learn manner.

ROUTINES FOR PLANNING AND LEADING LEARNING

The Course Organizer Routine is used to plan courses around essential learning and critical concepts. The teacher uses the routine to introduce the course and the rituals that will be used throughout the course. The teacher then uses this framework throughout the year to maintain the big ideas and rituals. Research showed that use of the *Course Organizer Routine* helps teachers and students keep the big ideas in mind and focus their attention to understand important relationships. Instruction

results in learning more about the big picture and less in trying to cover large amounts of information. Teachers using the routine spent more time introducing major course ideas, concepts, themes, and routines to students than did the comparison teachers who did not learn the routine. Students with learning disabilities answered an average of three “big idea” course questions correctly at the beginning of the year. Students with learning disabilities in the class that used the *Course Organizer* answered correctly an average of eight “big idea” questions by the end of the course while students with learning disabilities in the class that did not use the *Course Organizer* answered only an average of four of the “big idea” questions correctly.

The Unit Organizer Routine is used to plan units; introduce and maintain the big ideas in units; and show how units, critical information, and concepts are related. Research results showed that when teachers used the *Unit Organizer Routine*, understanding and retention of information by low-achieving students, students with learning disabilities, and average-achieving students improved substantially over baseline as reflected in unit test scores and in scores on unit content maps and explanations of these maps. Students of teachers who used the *Unit Organizer Routine* regularly and consistently scored an average of 15 percentage points higher on unit tests than students of teachers who used it only irregularly.

The Lesson Organizer Routine is used to plan lessons and then introduce and connect ideas to the unit and the course. Research has shown that regular, explicit, and flexible use of the *Lesson Organizer Routine* by secondary classroom teachers can have a significant influence on student learning. Studies showed that use of the routine increased student learning and performance. Research results showed that the students of teachers who used the *Lesson Organizer Routine* regularly and consistently

Content Enhancement Instruction

scored an average of 15 percentage points higher on unit tests than students of teachers who used it irregularly.

ROUTINES FOR EXPLORING TEXT, TOPICS, AND DETAILS

The Clarifying Routine is used to focus on a topic and then explore related details and the topic's importance to the critical ideas and concepts. Using this routine, teachers can help students master the meaning of targeted words and phrases. Studies in upper-elementary and middle-school general education classes composed of highly diverse student populations, including students with learning disabilities and those for whom English is a second language, have shown that students benefit from teacher use of the routine. When teachers used the *Clarifying Routine*, high socioeconomic level students improved their number of correct answers by an average of 14 percentage points, middle socioeconomic level students by an average of 30 percentage points, and low socioeconomic level students by an average of 20 percentage points.

The Framing Routine is used to transform abstract main ideas and key topics into a concrete representation that helps students think and talk about the key topic and essential related information. Research results have consistently demonstrated that the routine can effectively facilitate subject-matter learning as well as the development of literacy and thinking skills. In a study focusing on written products of 35 eighth-grade students, students who were taught with the *Framing Rou-*

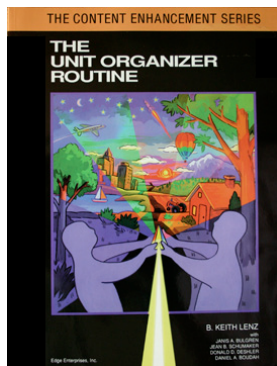
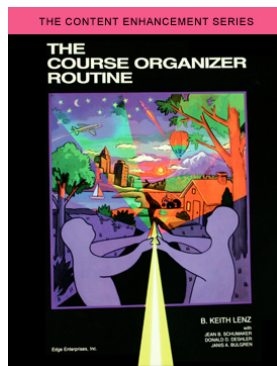
tine wrote an average of 102 words more per product than did the students who were in the comparison group.

The Survey Routine provides an overview of a reading assignment when students are having difficulty reading and sorting out information from inconsiderate text. Research has shown that students with learning disabilities and other low-achieving students as well as average- and high-achieving students correctly answered an average of 10 percent to 15 percent more of their test questions when the *Survey Routine* was used than when the *Survey Routine* was not used.

ROUTINES FOR TEACHING CONCEPTS

The Concept Anchoring Routine is used to introduce and anchor a new concept to a concept that is already familiar to students. In research studies with students in secondary science and social studies classes, high-achieving, average-achieving, and low-achieving students (including those with learning disabilities) who had been taught with the *Concept Anchoring Routine* correctly answered more test questions than students who had not received the routine instruction. Students with learning disabilities who were taught with the *Concept Anchoring Routine* scored an average of 25 percentage points higher than those who were not taught with the routine. Low-achieving, average-achieving, and high-achieving students taught with the *Concept Anchoring Routine* scored averages of 27, 19, and 7 percentage points higher than their respective groups that were not taught with the routine.

The Concept Comparison Routine is used to help students compare and contrast key concepts. Research with students enrolled in general secondary science and social studies classes showed that students correctly answered substantially more test questions related to information that had been presented through the use of the routine than test questions related to information presented using traditional teaching methods. Students with learn-



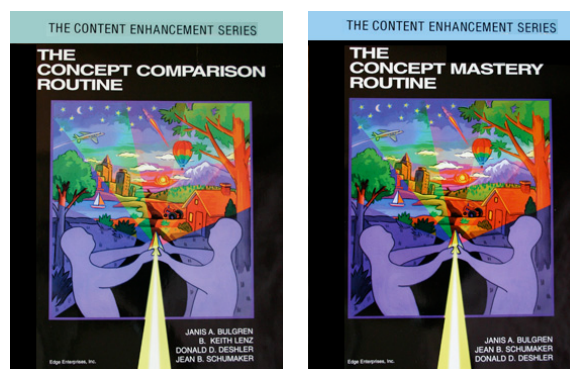
ing disabilities and other low-achieving students correctly answered an average of 71.2 percent (LD) and 86.4 percent (NLD) of the test questions associated with information presented through the use of the routine, compared to 56.7 percent (LD) and 62.6 percent (NLD) of the questions associated with information presented through traditional means. The experimental study involved 107 students.

The Concept Mastery Routine is used to define, summarize, and explain a major concept and where it fits within a larger body of knowledge. Research shows that secondary teacher use of the routine benefits the student in several ways. First, students scored significantly better on tests designed to assess concept acquisition. Second, students scored significantly better on regularly scheduled, teacher-made or commercial unit tests during the enhancement condition than during baseline. Gains by students with learning disabilities (from a mean score of 60 percent to 71 percent) were comparable to those of their peers without learning disabilities (from a mean score of 72 percent to 87 percent) on these regular tests. The percentage of students with learning disabilities who passed increased from 57 percent to 75 percent; the percentage of students without learning disabilities who passed increased from 68 percent to 97 percent. Third, the students took better notes during the enhancement condition than before using the routine.

ROUTINES FOR INCREASING PERFORMANCE

The ORDER Routine aligns higher-order skills with systematic procedures. To check and summarize content learning, including discrete facts and comprehension, students are guided in identifying key lesson content and its expository relationships and in graphically representing what they know. The products of the routine include improved comprehension and a device useful for reference and further studying.

The Quality Assignment Routine is used



to plan, present, and engage students in quality assignments and then evaluate assignments with students. In a research study, teachers and students completed surveys and groups of teachers and students participated in focus groups. From these activities, researchers identified characteristics of good assignments and the important elements such as planning behaviors, presentation behaviors, and evaluation procedures. Research study results showed the following: Before the study, teachers were observed to include an average of 50.5 percent of the planning behaviors, 32.8 percent of the presentation behaviors, and 8.2 percent of the evaluation procedures. After the intervention, participants used an average of 96.1 percent of the planning behaviors, 89.3 percent of the presentation behaviors, and 93.8 percent of the evaluation procedures. In contrast, a group of comparison teachers used an average of 45 percent of the planning behaviors, 26 percent of the assignment presentation behaviors, and 10 percent of the evaluation procedures at the end of the study. Teachers who received instruction in the use of the routine and their students were significantly more satisfied with assignments.

The Question Exploration Routine is a package of instructional methods that teachers can use to help a diverse student population understand a body of content information by carefully answering a “critical question” to arrive at a main idea answer. Research results showed that students who were taught a lesson using the *Question Exploration Routine* earned an average test score of 70

Content Enhancement Instruction

percent while students who were taught the lesson with traditional methods scored an average of 48 percent.

The Recall Enhancement Routine focuses on procedures teachers can use to help students remember information. A post-test only comparison group study indicated that performance of students was related to the teacher's use of the routine. Students with or without disabilities in the classes of teachers who used the routine performed significantly better on test items that could best be addressed through the creation of the types of Recall Devices that their teachers had presented than did students in the comparison classes. The recall performance of both students with learning disabilities and students without learning dis-

abilities in the experimental group was higher by 29.10 and 20.5 points, respectively, than the performance of similar students in the control group on reviewed facts.

The Vocabulary LINCing Routine is designed to facilitate student use of two powerful tools—an auditory memory device and a visual memory device—that will help them learn and remember the meaning of complex terms. Research results showed that students, including those with learning disabilities, improved their performance by an average of 19 percentage points on vocabulary tests.

The following pages present examples of SIM Content Enhancement Routines and their associated devices.

Course Organizer Routine

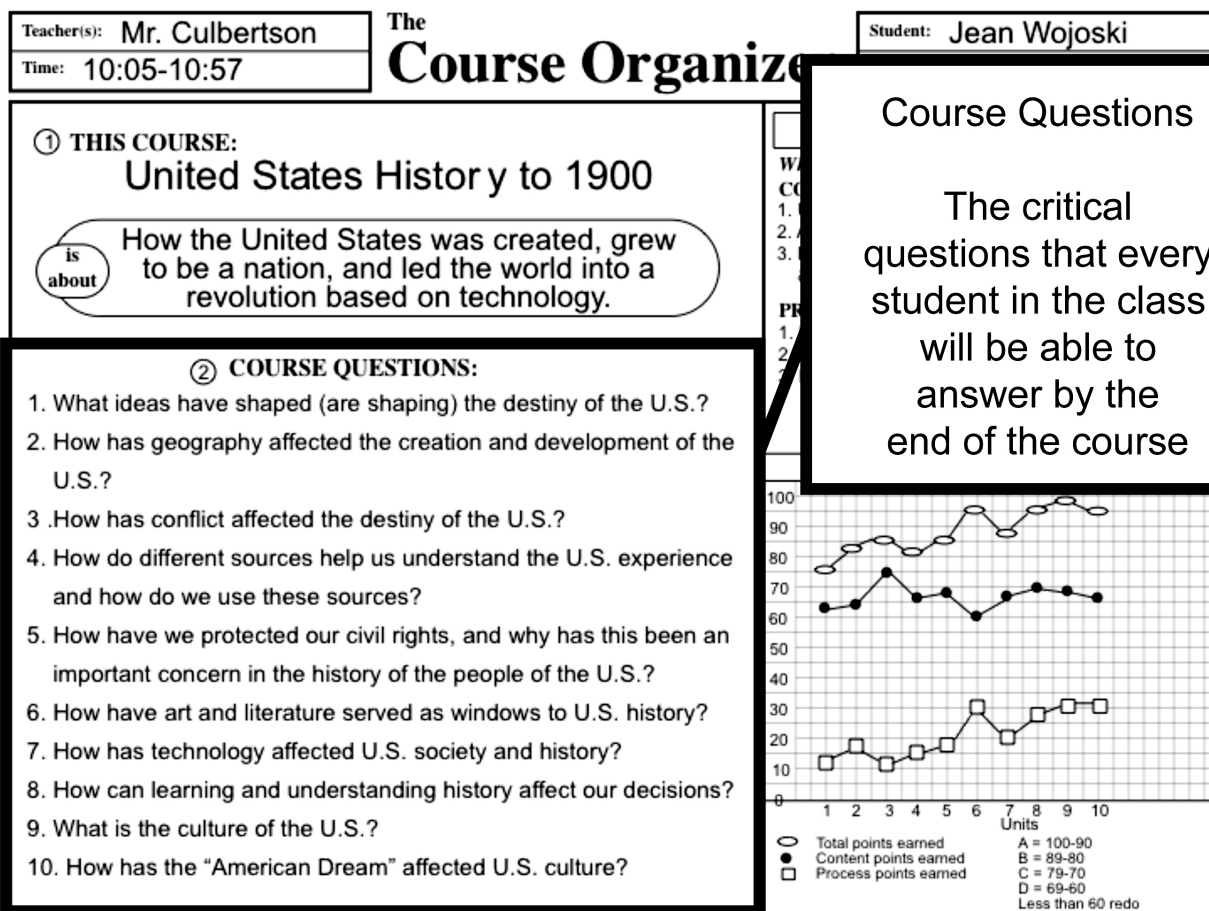
THE VALUE OF COURSE PLANNING

- Creates a “mindset” for identifying and presenting outcomes and using new methods
- Promotes the development of broad and inclusive teaching routines that respond to academic diversity
- Communicates coursewide expectations about how content, learning, and social interactions will be organized during the first weeks of a course
- Defines how the learning community will be created and maintained

THE COURSE QUESTIONS

- Serve as the basis for many conversations with students.

- Include expectations related to *how* to learn or demonstrate competence.
- Identify ways in which students should think about information to be learned.
- Lead students to do well on outcome measures.
- Enable students to monitor progress in learning.
- Help students identify the critical concepts or ideas to be shared.
- Help students think about the context and how it fits into other contexts.
- Help students organize information that supports the critical concepts or ideas to be learned.
- Use words like “how” and “why” to form broad questions (not objectives or commands).



Content Enhancement Instruction

Unit Organizer Routine

The *Unit Organizer Routine* helps students to

- Relate unit content to previous and future units and to bigger course ideas
- Understand the main idea of the content through the use of a meaningful paraphrase of the “big idea” of the unit
- See the structure of the unit’s content
- Focus attention on important relationships in the content of the unit

- Generate questions that relate to learning the big ideas of the unit
- Build a schedule to plan time and task completion
- Keep the “big ideas” and structure of the unit in mind as unit content is learned

The Unit Organizer

		(4) BIGGER PICTURE		NAME <u>Elida Cordora</u>																										
		DATE <u>1/22</u>																												
← The roots and consequences of civil unrest. →																														
(2) LAST UNIT /Experience Growth of the Nation		(1) CURRENT UNIT The Causes of the Civil War		(3) NEXT UNIT /Experience The Civil War																										
(8) UNIT SCHEDULE <table border="1"> <tr><td>1/22</td><td>Cooperative groups - over pp. 201-210</td></tr> <tr><td> </td><td> </td></tr> <tr><td>1/28</td><td>Quiz</td></tr> <tr><td>1/29</td><td>Cooperative groups - over pp. 210-225</td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td>"Influential Personalities" Project due</td></tr> <tr><td>1/30</td><td>Quiz</td></tr> <tr><td>2/2</td><td>Cooperative groups - over pp. 228-234</td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td>2/6</td><td>Review for test</td></tr> <tr><td>2/7</td><td>Review for test</td></tr> <tr><td>2/6</td><td>Test</td></tr> </table>		1/22	Cooperative groups - over pp. 201-210			1/28	Quiz	1/29	Cooperative groups - over pp. 210-225				"Influential Personalities" Project due	1/30	Quiz	2/2	Cooperative groups - over pp. 228-234					2/6	Review for test	2/7	Review for test	2/6	Test	(5) UNIT MAP 		
1/22	Cooperative groups - over pp. 201-210																													
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2/7	Review for test																													
2/6	Test																													
(7) UNIT SELF-TEST QUESTIONS What was sectionalism as it existed in the U. S. of 1860? How did the differences in the sections of the U.S. in 1860 contribute to the start of the Civil War? What examples of sectionalism exist in the world today?		(6) UNIT RELATIONSHIPS <table border="1"> <tr><td>descriptive</td></tr> <tr><td>compare/contrast</td></tr> <tr><td>cause/effect</td></tr> <tr><td> </td></tr> </table>		descriptive	compare/contrast	cause/effect																								
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Content Enhancement Instruction

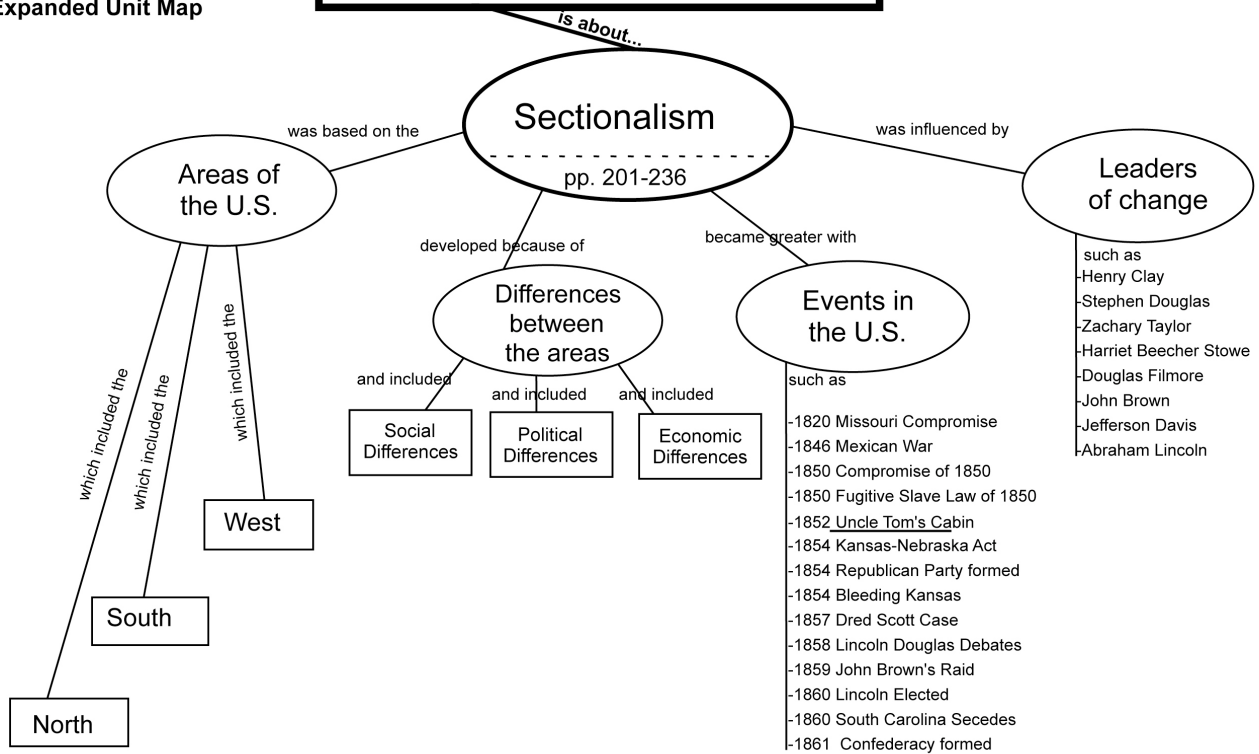
The Unit Organizer

The Causes of the Civil War

NAME Elida Cordora

DATE 1/22

9 Expanded Unit Map

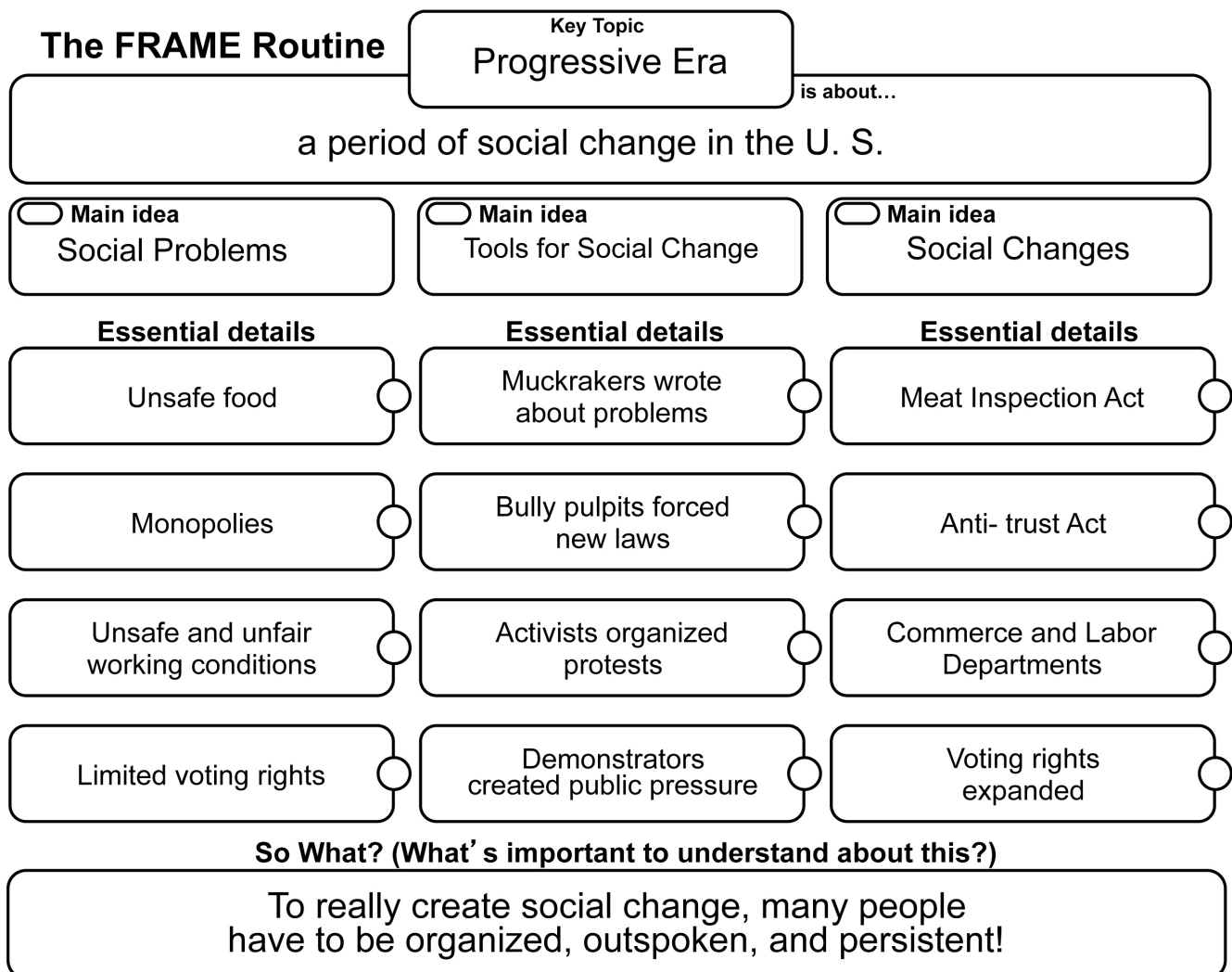


NEW UNIT SELF-TEST QUESTIONS

How did national events and leaders pull the different sections of the U.S. apart?

Framing Routine

The *Framing Routine* helps students to understand and learn key information and to focus on the relationships between main ideas and details



Survey Routine

The *Survey Routine* helps students to use cues provided by the author to find important information; focus on key information as they read; focus

on relationships among pieces and units of information; and record information for later studying and use.

Student Name: Bob Nelson

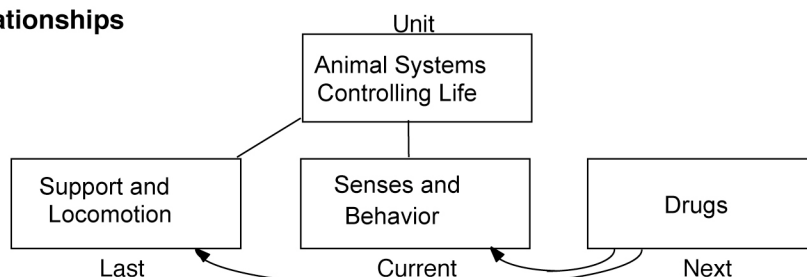
TRIMS Learning Sheet

Title

1. Title: Senses and Behavior (to be revised)
2. This is about How our senses relate to our behavior

Relationships

3.



4. The relationship of current passage to the unit: The senses are one type of animal system that controls life.
5. The relationship of passages within the unit: Like the senses, support and locomotion are animal systems.
Drugs affect our senses and how we move.

Introduction

6. ● Senses affect behavior from birth.
- Behavior is how a person acts.
- Sense organs - parts of the body that tell what is going on around us.

Main Parts

7. (Fill in next page)

Summary/Critical Questions

8. ● Sense organs tell us what's happening around us. Sense organs have a special way of taking in information. Each is made of parts that work together to give us information.
- What is common across the sense organs? What is different?

Content Enhancement Instruction

Main Part #1: *The Eye* pg. 274

Questions

- What are the parts of the eye and their jobs? (LINCS)
- What are the four steps of the light pathway? (LISTS)
- _____

Parts & Job

<u>Outside parts:</u>		<u>Inside parts:</u>		<u>Lens Muscle</u>	<u>p. 274</u>
<u>Eyelid</u>	<u>Iris</u>	<u>Cornea</u>	<u>Retina</u>		<u>p. 275 top</u>
<u>Sclera</u>	<u>Pupil</u>	<u>Lens</u>	<u>Optic Nerve</u>		<u>p. 275 side</u>

Diagrams

Main Part #2: *The Tongue and Nose* pg. 276

Questions

- What are the four types of tastes detected by tongue neurons?(LISTS)
- What are the seven types of smells detected by nose neurons? (LISTS)
- Why are the tongue and nose grouped together?

Neuron Types

<u>Tongue Neurons:</u>		<u>Nose Neurons:</u>	<u>p. 276</u>
<u>Bitter</u>	<u>Salty</u>		
<u>Sour</u>	<u>Sweet</u>		

Diagrams

Main Part #3: *The Ear* pg. 277

Questions

- What are the parts of the ear and their jobs? (LINCS)
- What are the steps of the sound pathway? (LISTS)
- What are sound waves? (LINCS)

Parts & Job

<u>Outer Ear</u>	<u>Ear Bones</u>	<u>p. 278 top</u>
<u>Ear Canal</u>	<u>Oval Window</u>	<u>p. 278 bottom</u>
<u>Ear Drum</u>	<u>Spiral Tube</u>	

Diagrams

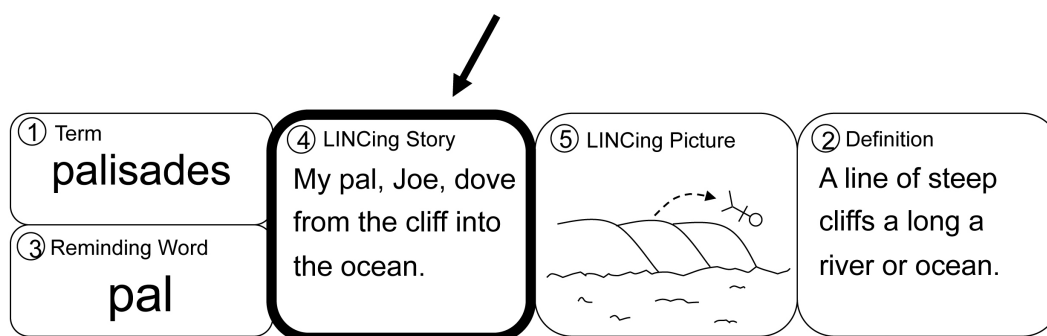
Vocabulary LINCing Routine

The *Vocabulary LINCing Routine* helps students remember the meaning of important words and “revisit” and solidify their knowledge of terms introduced or taught in a lesson

Section 4 of the LINCS Table

The LINCing Story

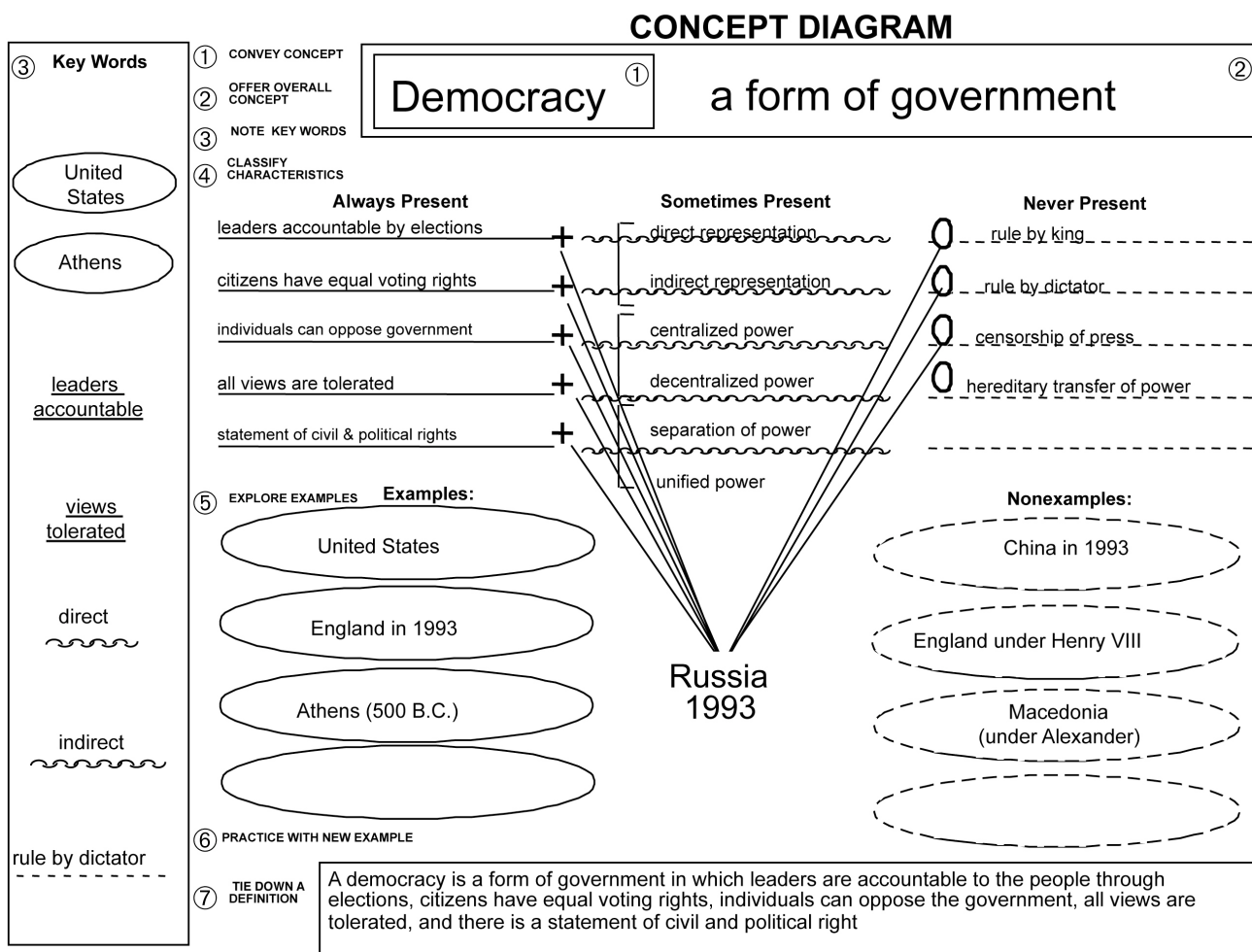
A phrase or sentence that connects—or links—the definition of the new term to the Reminding Word.



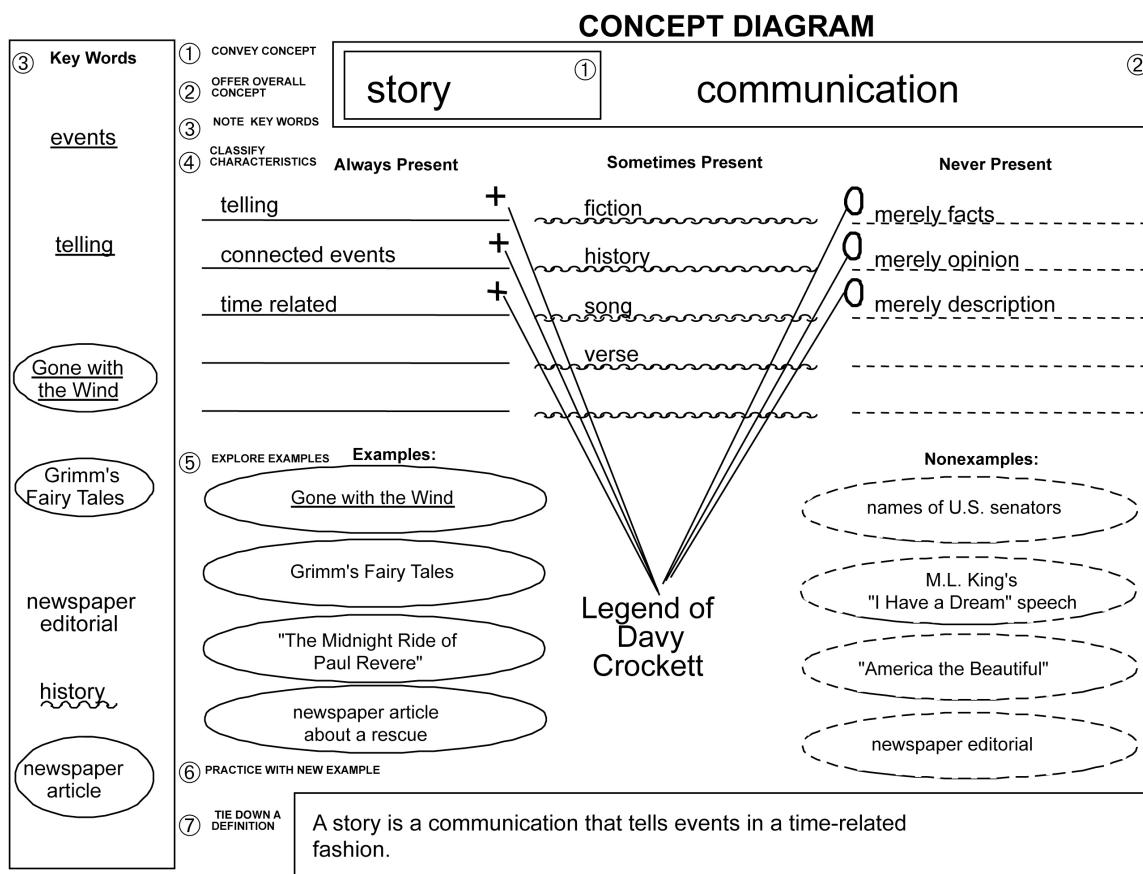
Concept Mastery Routine

The *Concept Mastery Routine* helps students to understand an important targeted concept; explore their prior knowledge of the concept; understand the relationship of the targeted concept to the overall concept class to which the targeted concept

belongs; classify characteristics associated with the targeted concept; explore instances to distinguish examples from nonexamples of the concept; and construct a good definition of the targeted concept



Content Enhancement Instruction



Learning Strategies Curriculum

The learning strategies listed here have been successfully field tested with students judged to be at risk for academic school failure; additionally, all of the strategies have been field tested with students judged to have learning disabilities. The research took place in public schools, primarily in middle and high school settings, and the strategies were field tested by teachers. Research has demonstrated that consistent, intensive, explicit instruction and support are key ingredients for instructional success. A combination of instructional models involving general education teachers and special education teachers, individually and collaboratively, has been successfully tested. All of the strategies are taught using a standard set of instructional procedures. These procedures define the necessary instructional conditions needed regardless of where the instruction occurs.

STRATEGIES RELATED TO READING

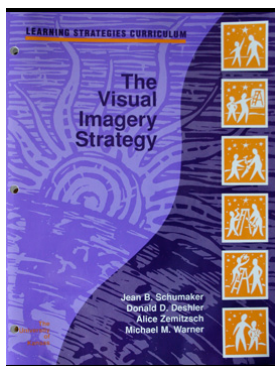
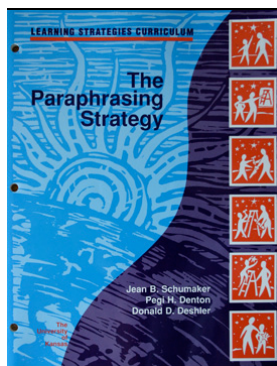
The Inference Strategy is a set of procedures readers can use to comprehend written passages and answer inferential questions (questions not answered directly in text). The strategy is founded on the procedures that good readers use to make connections within text and respond to inferential questions. The strategy is appropriate for either general education or special instructional settings, such as resource rooms or reading classes. In initial field tests, a small group of ninth-grade students

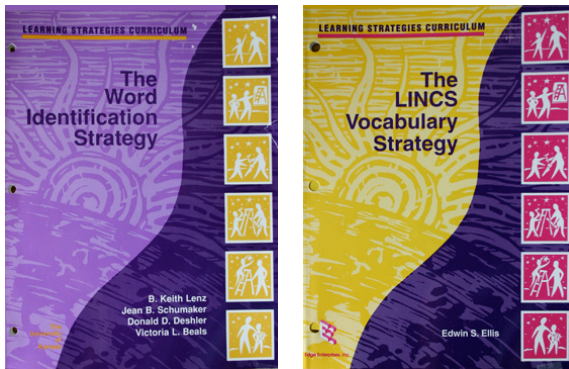
with special needs improved their average comprehension scores from 32 percent to 82 percent after learning to use the strategy. A later quasi-experimental group design study involved 525 sixth-graders in 17 English language arts classes at two middle schools. Results showed that students who learned the *Inference Strategy* performed significantly better on all posttest measures, including a standardized reading assessment.

The **Fundamentals of Paraphrasing and Summarizing** program helps students learn how to identify the topic, main idea, and details of a passage and then put the information in their own words. In a study of the effects of teaching these skills to students, tenth-grade students were required to paraphrase as they wrote the topic, main idea, and details of a paragraph in a passage. Scores for students who did not have disabilities increased from 69 percent before instruction to 84 percent after instruction. Scores for students with disabilities increased from 60 percent before instruction to 80 percent after instruction.

The Paraphrasing Strategy is designed to help students focus on the most important information in a passage. Students read short passages of materials, identify the main idea and details, and rephrase the content in their own words. Using grade-level materials, students performed at a 48 percent comprehension rate before learning the strategy. During the posttest, these students comprehended 84 percent of the material.

The Self-Questioning Strategy helps students create their own motivation for reading. Students create questions in their minds, predict the answers to those questions, search for the answers to those questions as they read, and paraphrase the answers to themselves. Research results have shown average gains of 40 percentage points in reading comprehension on grade-level materials after students have learned the strategy.





The Visual Imagery Strategy is a reading comprehension strategy for creating mental movies of narrative passages. Students visualize the scenery, characters, and action and describe the scenes to themselves. Research results showed that students who demonstrated a 35 percent comprehension and recall rate before learning the strategy improved to an 86 percent comprehension and recall rate after learning the strategy.

The Word Identification Strategy provides a functional and efficient strategy to help challenged readers successfully decode and identify unknown words in their reading materials. The strategy is based on the premise that most words in the English language can be pronounced by identifying prefixes, suffixes, and stems and by following three short syllabication rules. In a research study, students made an average of 20 errors in a passage of 400 words before learning this strategy. Having learned the *Word Identification Strategy*, students reduced their errors to an average of three per 400 words. Reading comprehension increased from 40 percent on the pretest to 70 percent on grade-level passages.

READING PROGRAMS

The **Fusion Reading** program is a highly structured supplemental reading course designed to teach an array of high-leverage reading strategies to increase student motivation and engagement and improve reading comprehension. The program consists of seven teacher manuals and three student workbooks. In field tests, students who

received instruction in *Fusion Reading* increased their reading comprehension scores an average of 5.05 standard score points as measured by the Group Reading and Diagnostic Evaluation (GRADE) reading measure. Students in the study's control group decreased standard score points by -0.8.

STRUCTURE Your Reading is an explicit approach to teaching strategic reading, providing a framework within which to teach specific reading comprehension strategies so that students can understand the role of individual strategies in the reading comprehension process. It is called a "strateroutine" because it begins as an instructional routine managed by the teacher and then develops into a strategy in the control of the reader.

STRATEGIES RELATED TO STORING AND REMEMBERING INFORMATION

The FIRST-Letter Mnemonic Strategy is a strategy for independently studying large bodies of information that need to be mastered. Specifically, students identify lists of information that are important to learn, generate an appropriate title or label for each set of information, select a mnemonic device for each set of information, create study cards, and use the study cards to learn the information. Research results showed that students who learned the *FIRST-Letter Mnemonic Strategy* increased their test grades from an average of 51 percent before learning the strategy to 85 percent after learning the strategy.

The LINC'S Vocabulary Strategy helps students learn the meaning of new vocabulary words using powerful memory-enhancement techniques. Strategy steps cue students to focus on critical elements of the concept; to use visual imagery, associations with prior knowledge, and key-word mnemonic devices to create a study card; and to study the card to enhance comprehension and recall of the concept. Research results showed that in a social studies class in which the *LINC'S Vocabulary Strategy* was taught to the students, the

students with learning disabilities performed at a mean of 53 percent in the pretest and at a mean of 77 percent correct answers after learning the strategy. In the control class in which students did not learn the strategy, the mean percentage of correct answers decreased from the pretest to the posttest.

Listening and Note-Taking helps students master the art of taking notes by identifying important information during a lecture, writing quickly, sorting main ideas and details while they write, and studying their notes. In a study of 13 undergraduate college students with learning disabilities, students increased the number of headings or main ideas they correctly identified from 51 percent before instruction to 88 percent after instruction. They also increased the number of key words they recorded correctly from 49 percent to 69 percent. Their comprehension scores increased from 28 percent before instruction to 76 percent after instruction. In a second study with ninth-grade students with and without disabilities, participants were able to record at least 96 percent of the main ideas after learning the strategy. In addition, all students significantly increased the number of key words and details recorded after instruction in the strategy.

The Paired Associates Strategy is designed to help students learn pairs of informational items, such as names and events, places and events, or names and accomplishments. Students identify pairs of items, create mnemonic devices, create study cards, and use the study cards to learn the information. Research has shown that before students learned this strategy, they answered correctly only an average of 8 percent of test questions related to paired information when the paired information was identified for them. After they mastered the strategy, they answered correctly an average of 85 percent of the questions about paired information that was identified for them. When given reading passages to study on their own, they answered an average of 22 percent of test questions correctly before instruction in the strategy versus

answering 76 percent correctly after mastering the strategy.

The Word Mapping Strategy helps students quickly predict the meanings of unknown words. It involves breaking words into their morphemic parts (i.e., prefix, suffix, root); attaching meaning to each word part; making a prediction about the meaning of the unknown word based upon the meaning of each part; and checking the dictionary for the definition. A mnemonic device, MAPS, helps students learn and remember the names of the steps. In studies, students who used the *Word Mapping Strategy* were able to correctly predict the meanings of unknown words 51 percent of the time compared to 16 percent of the time before instruction. Students also were able to learn the meanings of targeted vocabulary, resulting in an average score of 73 percent on posttests.

STRATEGIES RELATED TO EXPRESSING INFORMATION

The EDIT Strategy: An Essential Element of the Writing Process combines new procedures with elements of two older strategies (the *Error Monitoring Strategy* and the *InSPECT Strategy*) to help students find and correct mechanical errors—spelling, capitalization, sentence completeness, formatting, and punctuation—made on assignments they have written using a word processor. It also prompts students to edit for meaning and add details and elaborate on their statements. Though developed for word processing, the strategy can be modified for use with handwritten products. In a randomized control study of the effectiveness of the strategy, participating upper elementary and middle-school students with learning disabilities and documented writing problems were able to detect and correct 80 percent of the errors embedded in a written passage, compared to 28 percent of the errors before learning the strategy. In their own writing, students who did not learn the strategy had five times more errors than students who learned the strategy.

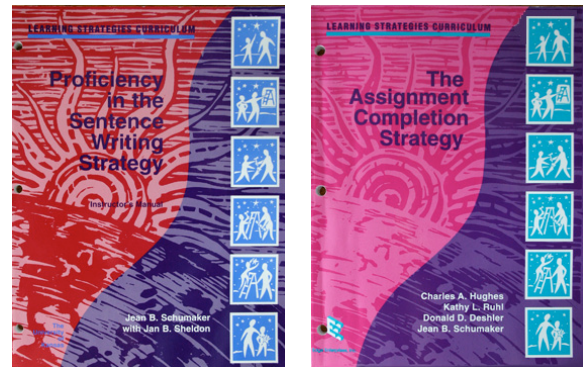
The Paragraph Writing Strategy is a strategy for organizing ideas related to a topic, planning the point of view and verb tense to be used in the paragraph, planning the sequence in which ideas will be expressed, and writing a variety of topic, detail, and clincher sentences. The program consists of two products: an *Instructor's Manual* and a *Student Lessons Manual*. The *Instructor's Manual* features a systematic sequence of instructional procedures; the *Student Lessons Manual* features exercises that correspond to the instructional procedures. Research results showed that students earned an average of 40 percent of the points available when writing a paragraph on the pretest and an average of 71 percent of the points available when writing a paragraph on the posttest.

The Sentence Writing Strategy program comprises two parts: *Fundamentals in the Sentence Writing Strategy* and *Proficiency in the Sentence Writing Strategy*. Together, these components constitute a strategy for recognizing and writing 14 sentence patterns with four types of sentences: simple, compound, complex, and compound-complex. The program consists of two products: an *Instructor's Manual* and a *Student Lessons Manual*. The *Instructor's Manual* features a systematic sequence of instructional procedures; the *Student Lessons Manual* features exercises that correspond to instructional procedures. Research results showed that students wrote an average of 65 percent complete sentences on the pretest and an average of 88 percent complete sentences on the posttest.

The Theme Writing Strategy focuses on the fundamental skills associated with writing themes and provides learning sheets to accompany instruction.

STRATEGIES RELATED TO DEMONSTRATING COMPETENCE

The Assignment Completion Strategy is designed to enable students to complete and hand in assignments on time. The package consists of two books: the *Instructor's Manual*, which provides step-by-



step instruction for teaching this strategy, and the *Quality Quest Planner*, a spiral-bound notebook designed specifically for student use with the strategy. Each *Instructor's Manual* comes with one *Quality Quest Planner* and contains the materials needed to teach the strategy, including blank copies of the forms used with the planner. The planner contains sufficient forms for recording, scheduling, and evaluating assignments for an entire academic year. Performance results in general education classes showed that the number of students who simply turned in their assignments before learning the *Assignment Completion Strategy* was 43 percent, with the percentage increasing to 77 percent after students learned the strategy. Before learning the strategy, the number of students who did the assignment correctly was 45 percent. After learning the strategy, the number of students who did the assignment correctly increased to 73 percent.

The **Essay Test-Taking Strategy** is designed to help students deal effectively with the complex test-taking demands of courses in school as well as the essay test-taking demands associated with state competency tests, including high-stakes tests, and college entrance exams. Students are taught to analyze the essay question, organize the information they know, write their answer with a specific structure, and revise with edits to create a polished product.

Strategic Tutoring describes a new vision of the tutoring process in which the tutor not only helps the student complete and understand the immediate assignment but also teaches the stu-

dent the strategies required to complete similar tasks independently in the future. Research results showed that the students in *Strategic Tutoring* improved their achievement test scores in reading comprehension, written expression, and basic math skills. On average, their grade-level achievement scores increased by 10 months during a four-month instructional period. In contrast, the students in the comparison group without the *Strategic Tutoring* instruction experienced a mean gain of only 3.5 months during the same period.

The Test-Taking Strategy is designed to be used while taking classroom tests. Students allocate time and priority to each section of the test, carefully read and focus on important elements in the test instructions, recall information by accessing mnemonic devices, systematically and quickly progress through a test, make well-informed guesses, check their work, and take control of the testing situation. The emphasis is on teaching adolescents and adults who struggle with learning. In studies, students who learned the *Test-Taking Strategy* achieved an average 10-point increase on tests.

STRATEGIES RELATED TO SOCIAL INTERACTION

SLANT: A Starter Strategy for Class Participation is a simple, easy-to-teach strategy designed to help students learn how to use appropriate posture, track the talker, activate their thinking, and contribute information.

Cooperative Thinking Strategies:

– **The BUILD Strategy** is a strategy students can use to work together to resolve a controversial issue. The purpose of the strategy is to enable students to work together to make decisions using a process similar to a debate. Research results showed that the average score for students in the experimental group from the observational measure and products written by students as they discussed the issue was 21.4 percent on the pretest and 80.1 percent after learning the *BUILD Strategy*. The comparison group that did not learn the strat-

egy scored 15.1 percent on the pretest and 19.6 percent on the posttest.

– **The LEARN Strategy** was designed to enable students to work in teams to learn together. Each step promotes creative cooperation; students think together to generate ideas to help them learn. Research results indicated that students in the experimental classes performed a significantly higher percentage of study behaviors than comparison students in their cooperative study groups at the end of the school year. Experimental group pretest scores averaged 18 percent with posttest scores averaging 70 percent. The comparison group pretest score average was 27 percent with the posttest score average 35 percent.

– **SCORE Skills: Social Skills for Cooperative Groups** describes a set of social skills that are fundamental to effective groups. Students learn to share ideas, compliment others, offer help or encouragement, recommend changes nicely, and exercise self-control. Results showed the mean percentage of cooperative skills used by students in cooperative groups in class before learning SCORE was 25 percent. The mean percentage increased to 78 percent after learning SCORE. The students in the comparison group that had no instruction in SCORE had average scores of 25 percent and 28 percent for the cooperative skills they used in the cooperative groups.

– **The Teamwork Strategy** provides a framework for organizing and completing tasks in small groups. Students analyze an assignment and divide it into specific tasks, equitably assign those tasks to individuals, offer and request help to complete the individual jobs, ask for and give feedback to other group members, assemble the individual jobs into one product, and evaluate the process used to complete the project and assess the interpersonal skills of group members. In field tests, students in experimental classes increased their

use of cooperative skills dramatically, from one-quarter to one-third of identified skills to three-quarters of the skills. Some groups chose not to use the strategy for some tasks. When students used the strategy, cooperative skill performance was close to 100 percent.

– **The THINK Strategy** is used by students working together in teams to systematically solve problems. The research studies in which this strategy was used developed school improvement goals in which problem solving, reasoning, and communicating were major targeted areas. Results showed that the mean percentage of points earned by the groups before instruction was the same for experimental and comparison groups at 34 percent. However, at the end of the school year, the mean percentage score for the experimental groups was 84 percent and for the comparison groups 39 percent.

The Community Building Series: In this series, the general goal is to create safe and supportive learning environments for students with disabilities in inclusive classes. This is done through teaching students about concepts such as respect and tolerance and providing each student a partner who can provide support during the learning process.

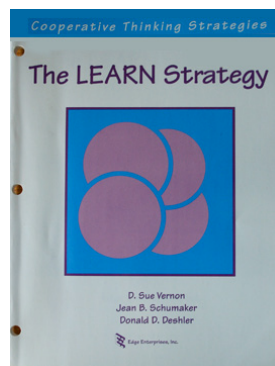
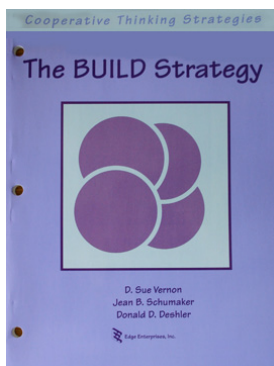
– **Following Instructions Together** is designed to teach students concepts and strategies associated with following instructions effectively. In a field test involving 20 elementary teachers and their students, significant differences were

found between students who participated in the *Following Instructions Together* program (experimental group) and students who did not (comparison group). Experimental students answered significantly more questions correctly about community concepts and followed complex instructions significantly more accurately than comparison students.

– **Organizing Together** is a program that can be used to provide instruction in some basic strategies associated with keeping notebooks, schedules/calendars, desks, lockers/cubbies, and backpacks organized. In a field test involving six elementary teachers and their students, significant differences were found between the students who participated in the *Organizing Together* program (experimental group) and those who did not. Experimental students answered significantly more questions correctly about community concepts, they understood and could more accurately use a weekly calendar, and their notebooks, desks, backpacks, and lockers were significantly more organized than those of comparison students.

– **Taking Notes Together** is a program that can be used to teach students a simple strategy for taking notes in response to a variety of stimuli, including lectures, demonstrations, movies/videotapes, and reading assignments. In a field test involving 12 teachers and their elementary students, significant differences were found between students who participated in the *Taking Notes Together* program (experimental group) and students who did not (comparison group). Experimental students answered significantly more questions correctly about community concepts, and they understood and could more accurately and comprehensively take notes related to lectures, reading assignments, videotapes, and demonstrations than comparison students.

– **Talking Together** is an instructional pro-



Strategy Instruction

gram designed for introducing the concept of learning community to students and for teaching them how to participate respectfully in class discussions. In a research study involving 20 teachers and 377 students, results showed that students in experimental classes that had participated in *Talking Together* lessons knew significantly more about how to create a classroom community, participated more frequently, and engaged in fewer behaviors that would disrupt a discussion than the comparison classes.

STRATEGIES RELATED TO MOTIVATION

Possible Selves is designed to increase student motivation by having students examine their futures and think about goals that are important to them. Students think about and describe their hoped-for possible selves, expected possible selves, and feared possible selves. They set goals, create plans, and work toward their goals as part of this program. In research studies, students in the *Possible Selves* condition scored significantly higher than students in the control group on measures of goal identification. In one study, at the end of six years, the students in the *Possible Selves* group had earned higher grade-point averages than the students in other groups.

The Self-Advocacy Strategy can be used by students when preparing for and participating in

any type of conference, including education and transition planning conferences (IEP or ITP conferences). Strategy steps provide a way of getting organized before a conference and provide effective communication techniques to use during the conference. When students learned the *Self-Advocacy Strategy*, 86 percent of the goals they most valued were found in their IEPs. Students who had not learned the *Self-Advocacy Strategy* had only 13 percent of their desired goals in their IEPs.

STRATEGIES RELATED TO MATH

The Strategic Math Series focuses on how to teach basic math facts and operations to students of any age. Content is built upon the concrete-representational-abstract method of instruction. In this approach, understanding of mathematics is developed through the use of concrete objects, representational drawings, and an easy-to-learn strategy that turns all students into active problem solvers. The series includes the following manuals:

- *Addition Facts 0 to 9*
- *Addition Facts 10 to 18*
- *Addition with Regrouping*
- *Subtraction Facts 0 to 9*
- *Subtraction Facts 10 to 18*
- *Subtraction with Regrouping*
- *Multiplication Facts 0 to 81*
- *Division Facts 0 to 81*
- *Place Value.*

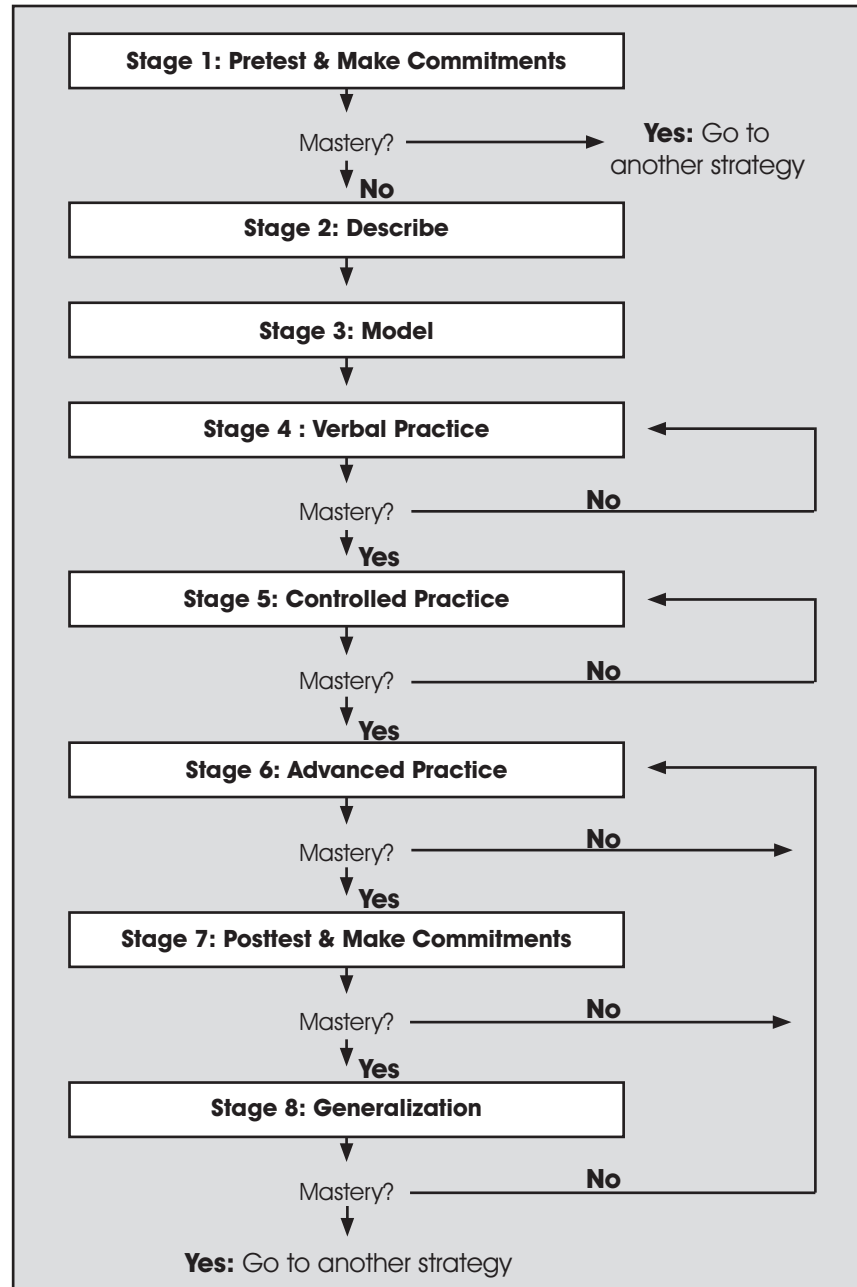
The Strategic Instruction Model Eight-Stage Instructional Process

WHAT IS A STRATEGY?

An individual's approach to a task is called a strategy. It includes how a person thinks and acts when planning, executing, and evaluating performance on a task and its outcomes.

THE INSTRUCTIONAL PROCESS

For a strategy to serve a student well, it must be learned to an automatic level. Just as we use repetition to teach the beginning reader to master basic sound-symbol relationships, we teach the student to master task-specific learning strategies through much structured practice. Research has shown that 98 percent of all the low-achieving students who have been taught learning strategies have mastered them if the eight-stage instructional process is followed carefully.



Strategy Instruction

STAGE 1: PRETEST AND MAKE COMMITMENTS

In this stage, students take a test to determine the strengths and weaknesses in their approach to a specific learning task.

STAGE 2: DESCRIBE

In this stage, the teacher “paints a picture” of the nature of the strategy and the advantages of using it, describes the strategy’s steps, and helps students set goals for how fast they want to learn.

STAGE 3: MODEL

In this stage, teachers demonstrate all the steps of the strategy while “thinking aloud” so the students can witness all the cognitive processes and overt behaviors involved in performing the strategy.

STAGE 4: VERBAL PRACTICE

In this stage, students learn to explain and name the strategy steps, verbally elaborate on the cognitive processes and definitions, and verbally rehearse the steps.

STAGE 5: CONTROLLED PRACTICE AND FEEDBACK

In this stage, students practice using the new strategy in materials that are, in large measure, devoid of the high-level vocabulary, complex concepts, or other stringent demands of regular course materials. After each practice attempt, students receive individual feedback—perhaps the most important instructional element of the entire process.

STAGE 6: ADVANCED PRACTICE AND FEEDBACK

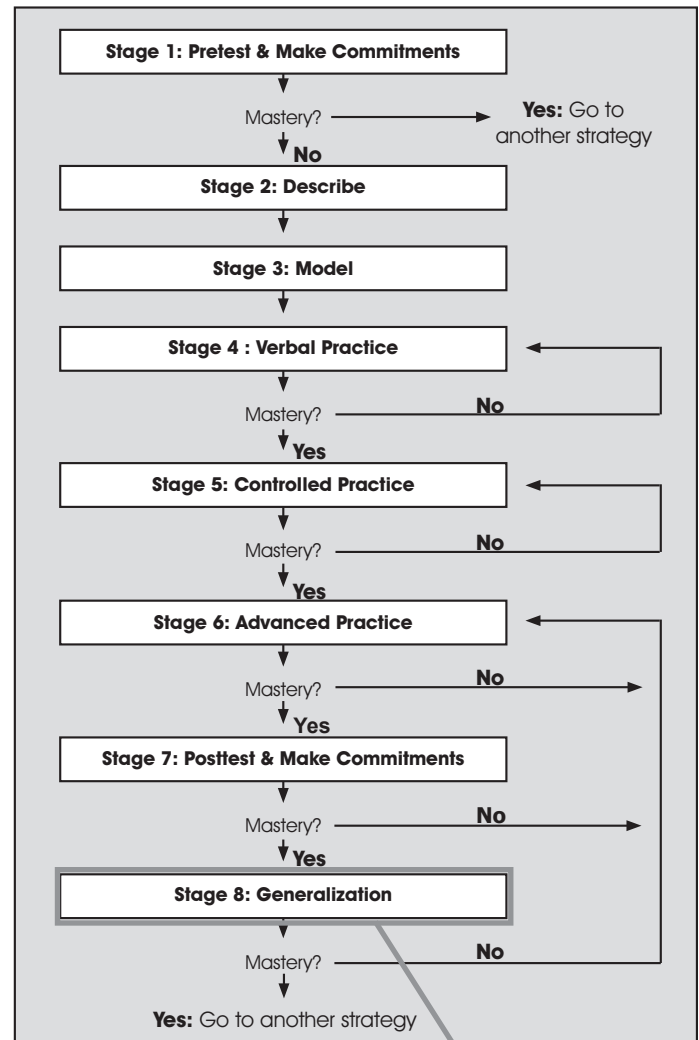
In this stage, students practice applying the strategy to the types of assignments they receive in general education classrooms. At the same time, the instructional prompts and cues given liberally in earlier stages fade during this stage, and students are encouraged to analyze their own performances.

STAGE 7: POSTTEST AND MAKE COMMITMENTS

In this stage, students’ progress in learning the strategy is assessed using materials and procedures similar to those used in Stage 1. Additionally, students are encouraged to analyze their progress and to make a commitment to use the new strategy in a variety of settings.

STAGE 8: GENERALIZATION

The real measure of the effect of strategic instruction is the degree to which students can generalize the acquired strategy to the “real” world and maintain their use of it over time. Research has shown that generalization instruction must be specifically programmed for low-achieving students if they are to be successful with a given strategy in a variety of situations. Four distinct phases are addressed in generalization instruction, from making students aware of situations in which the strategy is applicable to checking to ensure continued strategy use.



Phases of Generalization

Orientation

The teacher makes students aware of appropriate times to use the new strategy.

Activation

The teacher gives specific assignments so students can practice using the strategy in an array of settings

Adaptation

Students learn how to adapt the strategy to other types of tasks.

Maintenance

The teacher periodically checks to see whether students are continuing to use the strategy appropriately.

Word Identification Strategy (Michigan)

BACKGROUND

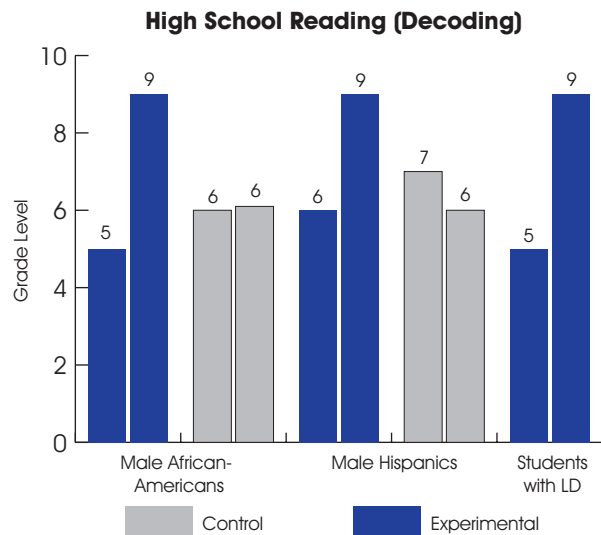
In the early 1990s, teachers at an inner city high school in Michigan began teaching SIM reading strategies to students with learning disabilities in a resource room setting. Data from this effort came to the attention of the school principal and the reading target-area committee, who were frustrated that large numbers of at-risk students (not formally classified as having learning disabilities) were failing because of poor reading skills. The committee decided to design a program that could be made available to all of the entering freshmen who were doing poorly in reading. All ninth-grade students were pretested using the Slosson Diagnostic Screening Test for Reading. Students who earned scores two or more years below grade level were targeted for instruction. The program was so successful that the teachers decided to set up an experiment to demonstrate the program's success.

STUDENT IDENTIFICATION

In 1998, all entering freshman students in the targeted high school and in a comparison high school were pretested with the Slosson Diagnostic Screening Test for Reading using the Word Identification Subtest (Form A). Students who scored at least two years below grade level and who were attending the targeted high school were designated to receive intensive reading instruction. Approximately 17 percent of these students had learning disabilities. Students at the comparison high school who scored at least two years below grade level on the pretest were matched by grade, sex, pretest score, and race with students at the targeted high school, and they served as the comparison group.

INSTRUCTIONAL PROGRAM

The designated students at the targeted high school received 50 minutes of intensive instruction on a daily basis (every day of the week) in



the *Word Identification Strategy*. They were pulled out of their English classes for this instruction, and they were taught in small groups (one teacher to four or five students). The instruction lasted three to eight weeks, depending on how many sessions each student required to reach mastery. After a student had mastered the strategy, he or she returned to instruction in the English class.

RESULTS

All participating students took a posttest, the Word Identification Subtest on the Slosson Diagnostic Screening Test for Reading (Form B). The graph shows the students' grade-level scores on the pretest and the posttest. The blue bars depict the mean scores for the students enrolled at the experimental high school. The gray bars show the mean scores for the students at the comparison school. Male African-Americans, male Hispanics, and students with learning disabilities at this high school made mean gains of about three grade levels with regard to decoding while they were in the program. Similar students in the other high school made either small gains or no gains on the average. Individual student data reflect these group means.

Word Identification Strategy (Kansas)

BACKGROUND

Personnel at an inner city school district in Kansas saw the results from the Michigan high school effort described on page 63 and decided to implement *Word Identification Strategy* instruction in their middle schools.

STUDENT IDENTIFICATION

Students were identified when they entered the sixth grade. All of the students earned scores below the 37th percentile on the Metropolitan Achievement Test. This test is given to every student in the district annually.

INSTRUCTIONAL PROGRAM

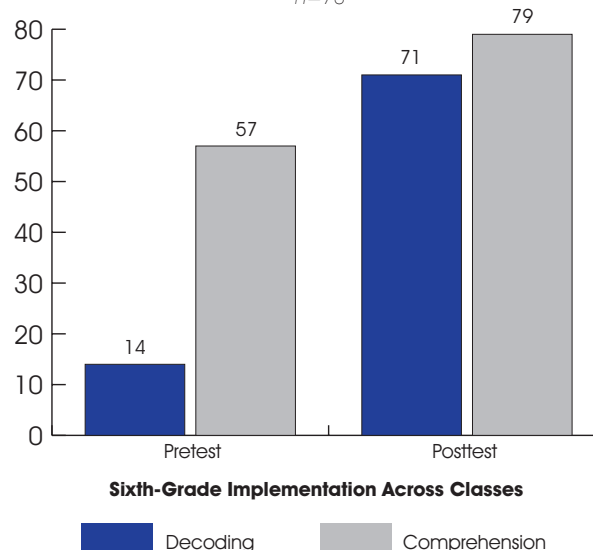
The students in the middle schools received 47 minutes of intensive daily instruction on the *Word Identification Strategy*. They were pulled out of reading classes or elective classes and taught in small groups. The instruction lasted seven to nine weeks, depending on a student's progress. For the rest of the school year, these students participated in monthly review sessions; they participated in five maintenance sessions each.

RESULTS

The graph depicts the results for 78 students in participating schools on two measures: the percentage of students decoding at least 98 percent of the words in a passage written at the sixth-grade level and the percentage of questions answered correctly on a reading comprehension test. With regard to decoding, before the instruction began, only 14 percent of the students were decoding 98 percent of the words correctly. After the instruction, 71 percent of the students were decoding 98 percent of the words correctly. The students correctly answered a mean of 57 percent of the comprehension questions on the pretest and 79 percent on the posttest.

Word ID Results—2000

n=78



Paraphrasing Strategy

BACKGROUND

Personnel at an inner city school district in Kansas decided to implement instruction in the *Paraphrasing Strategy* for all students in two middle schools.

STUDENT IDENTIFICATION

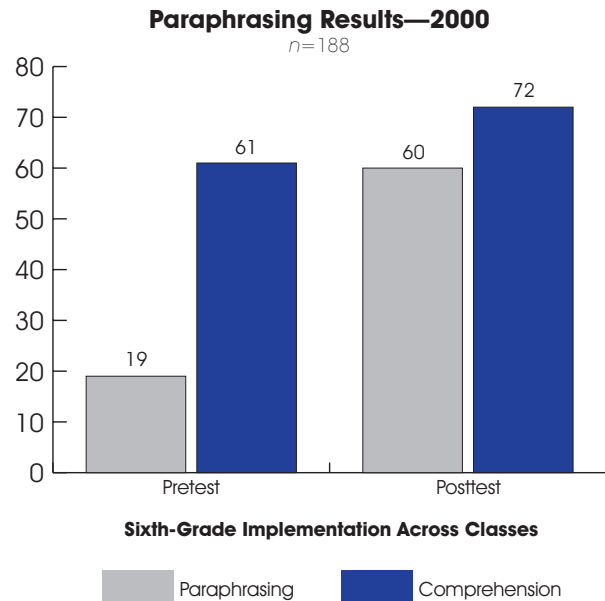
Student participants were all students regularly enrolled in a particular class. In both schools, the instruction was provided in a reading class.

INSTRUCTIONAL PROGRAM

Students received daily instruction in the *Paraphrasing Strategy* within a large-group configuration. The classes ranged in size from 22 to 28 students. The instruction lasted five to eight weeks, depending on the students' progress. The teachers followed the instructions in the *Paraphrasing Strategy* instructor's manual.

RESULTS

The graph depicts the results for 188 students in participating schools on two measures: the percentage of points earned on paraphrases constructed by the student about a reading passage and the percentage of questions answered correctly on a reading comprehension test. (These measures are described in the *Paraphrasing Strategy* manual.) Students earned an average of 19 percent of the points available on the paraphrasing pretest and 60 percent of the points available on the posttest. Students were correctly answering a mean of 61 percent of the comprehension questions on the pretest and 72 percent on the posttest.



Self-Questioning Strategy

BACKGROUND

A science teacher in an inner city school district in Kansas decided to implement instruction in the *Self-Questioning Strategy* in his general education seventh-grade science classes.

STUDENT IDENTIFICATION

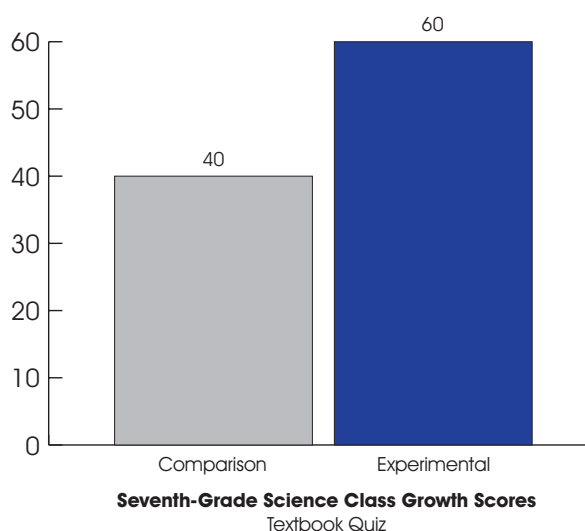
Student participants were all students regularly enrolled in six of the science teacher's classes. Three of these classes were selected to receive the instruction (hereafter referred to as "experimental classes"). These were the three weakest classes that the teacher was teaching. The three strongest classes were selected not to receive the instruction (hereafter referred to as "comparison classes").

INSTRUCTIONAL PROGRAM

Students in the experimental classes received instruction in the *Self-Questioning Strategy* within their science class at the regularly scheduled time from their science teacher. The teacher described and modeled the strategy, and the students practiced naming the steps of the strategy. During subsequent classes, as the students were working through their textbook assignments, the students wrote their questions and predictions on hand-held white boards and held them up so that the teacher and the rest of the class could see them. The classes ranged in size from 22 to 28 students. The instruction lasted about four weeks.

Self-Questioning—2001

n = 133



RESULTS

The graph depicts the results for 133 students in the participating classes on a textbook quiz. The teacher gave all the students the textbook quiz as a pretest measure. Then the teacher guided the experimental classes to use the *Self-Questioning Strategy* as they read a textbook chapter. He asked the comparison classes to read and study the chapter and used typical instructional methods (e.g., discussion, activities), which he had used all year. Then he gave all the students the textbook quiz again as a posttest. The bars on the graph depict the gains the students made between the pretest and the posttest. Experimental students made an average gain of 60 percentage points, whereas comparison students made an average gain of 40 points.

Sentence Writing Strategy

BACKGROUND

Personnel at an inner city school district in Kansas decided to implement instruction in the *Sentence Writing Strategy* for all students in three middle schools.

STUDENT IDENTIFICATION

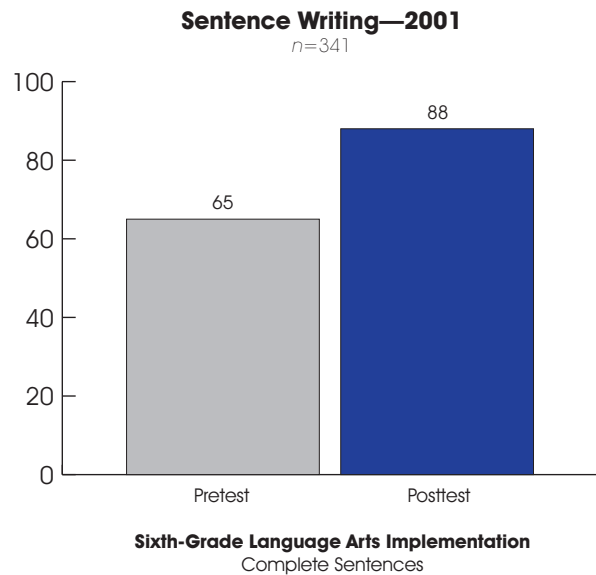
Student participants were all sixth-grade students regularly enrolled in language arts classes taught by a general education teacher.

INSTRUCTIONAL PROGRAM

Students received daily instruction in the *Sentence Writing Strategy* within a large-group configuration. The teachers followed the instructions in the *Sentence Writing Strategy* instructor's manual with added guided-practice activities. The classes ranged in size from 22 to 28 students. The instruction lasted five to nine weeks, depending on the students' progress.

RESULTS

The graph depicts the results for 341 students in participating schools. The students were asked to write a paragraph before the instruction began and after the instruction was complete. The percentage of complete sentences written by each student was determined. (This measure is described in the *Sentence Writing Strategy* manual.) Students wrote an average of 65 percent complete sentences on the pretest and 88 percent complete sentences on the posttest.



Paragraph Writing Strategy

BACKGROUND

One English teacher in an inner city school district in Kansas decided to implement instruction in the *Paragraph Writing Strategy* in her seventh-grade English classes.

STUDENT IDENTIFICATION

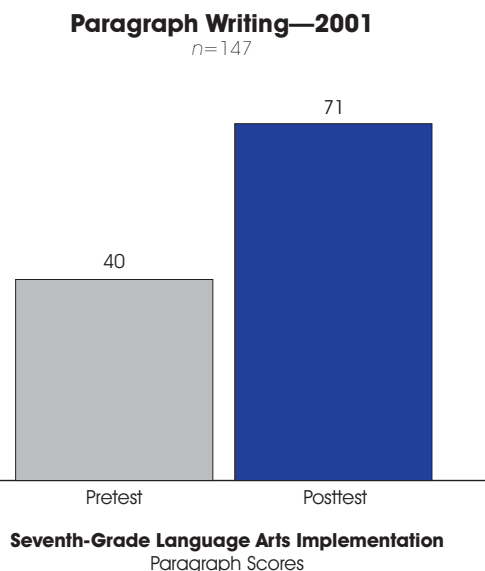
Student participants were all students regularly enrolled in this teacher's English classes.

INSTRUCTIONAL PROGRAM

Students received daily instruction in the *Paragraph Writing Strategy* within a large-group configuration. (They had not already learned the *Sentence Writing Strategy*.) The classes ranged in size from 22 to 28 students. The instruction lasted about six weeks, depending on the students' progress.

RESULTS

The graph depicts the results for 147 students in participating classes on a measure of paragraph organization, sentence construction, use of transitions, use of verb tense and point of view, and use of main ideas and details. (This measure is described in the *Paragraph Writing Strategy* manual.) The students wrote a paragraph before the instruction began as a pretest and another paragraph after the instruction was complete as a posttest. Students earned an average of 40 percent of the points available on the pretest and 71 percent of the points available on the posttest.



Word Identification Strategy (California)

BACKGROUND

Personnel at a school district in California decided to implement instruction in the *Word Identification Strategy* for students enrolled in specially designed language arts classes. The classes were taught by a general education teacher in collaboration with a resource specialist.

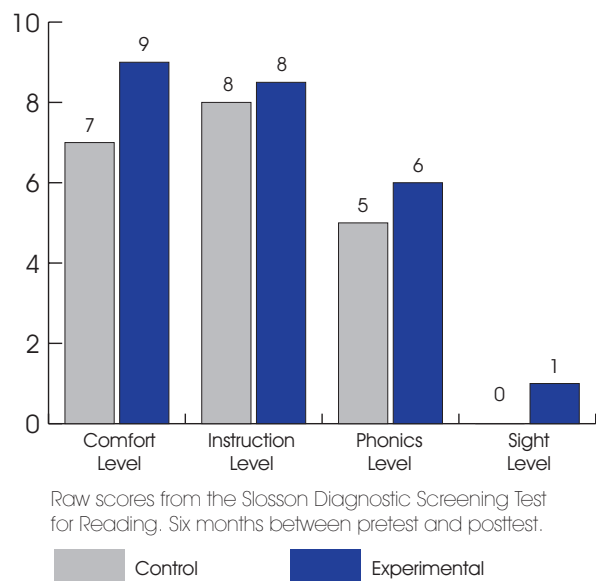
STUDENT IDENTIFICATION

Students scoring two or more years below grade level on the Gates-McGinitie Reading Comprehension Test were randomly enrolled in the targeted language arts classes. Three teachers volunteered to teach the experimental classes; three other language arts classes served as the comparison classes. The students enrolled in all six classes included students with and without disabilities as well as students who were English-language learners.

INSTRUCTIONAL PROGRAM

Students in the experimental classes received daily instruction in phonics and the *Word Identification Strategy* within their language arts class at the regularly scheduled time. The *Word Identification Strategy* instruction had been adapted so that the instruction could be delivered to large groups of students. In addition, students received some basic phonics instruction in conjunction with instruction in the *Word Identification Strategy*. After the initial introduction of the strategy to the students (six weeks; 30 minutes per day, four days a week), the remainder of the year (six weeks) involved prompting and ensuring student use of the *Word Identification Strategy* in relation to grade-level texts and fluency drills. Students in the comparison classes received instruction from the Language! reading program during this time. The classes ranged in size from 28 to 32 students.

The Word Identification Strategy
Growth in Raw Scores



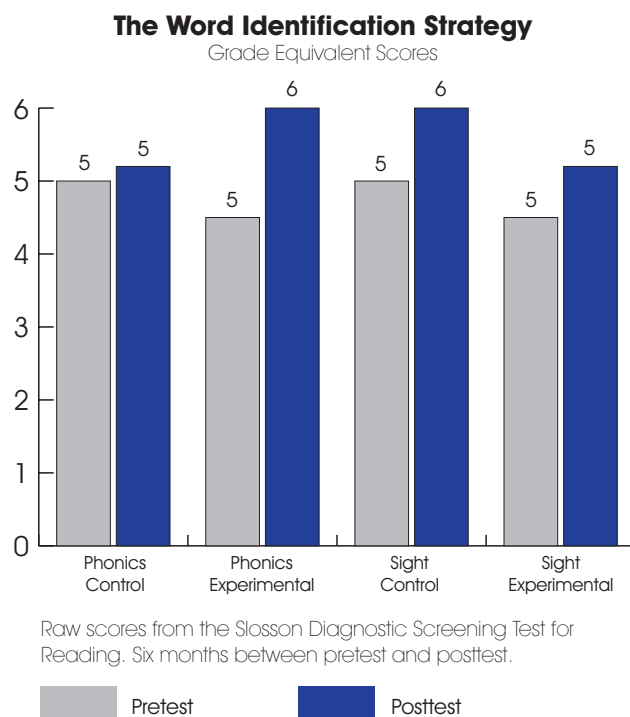
RESULTS

The first graph (above) depicts the results for 117 students in the participating classes related to four reading measures derived from the Slosson Diagnostic Screening Test for Reading. The bars on the graph depict the mean raw scores on the test for each group. Experimental students made greater gains between the pretest and the posttest than the comparison students on two reading measures: comfort level (a measure of the level at which a student can easily read words without assistance) and phonics level (a measure of word-attack skills involving seven basic rules of phonics).

The second graph (next page) depicts the results related to two reading measures derived from the Slosson Diagnostic Screening Test for Reading. The bars on the graph depict the mean grade equivalent scores on the test for each group. Experimental students made greater gains between the pretest and posttest than the comparison students on

Strategy Instruction

two reading measures: phonics level (a measure of word attack skills involving seven basic rules of phonics) and sight level (a measure of ability to read words that do not follow strict laws of pronunciation and must be recognized on sight).



Reading and Writing Learning Strategies

BACKGROUND

Personnel at an inner city high school in Michigan decided to implement instruction in the SIM reading and writing strategies with students with learning disabilities.

STUDENT IDENTIFICATION

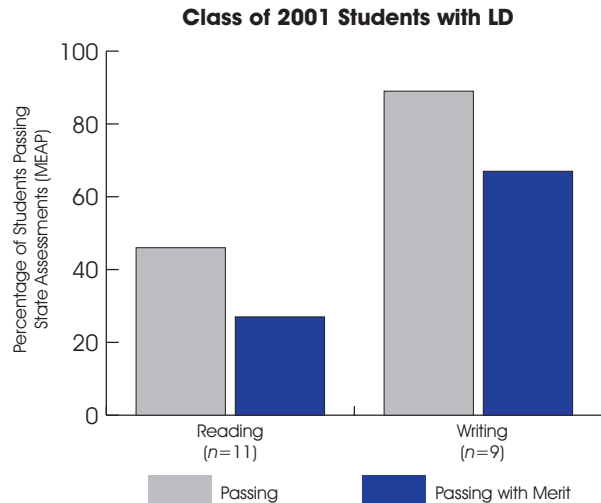
Student participants were all students regularly enrolled in the resource room program taught by a special education teacher.

INSTRUCTIONAL PROGRAM

Students received daily instruction in learning strategies within a small-group configuration, depending on strategies targeted by their IEPs. The instruction lasted until the student mastered a given strategy. Then instruction proceeded to another strategy.

RESULTS

The graph depicts the results for 11 students (reading) and nine students (writing) with learning disabilities in the high school class of 2001 on the Michigan state assessment in reading and writing. The gray bar depicts the percentage of students who passed the state assessment; the blue bar depicts the percentage of students who passed the state assessment with merit.



Writing Strategies

BACKGROUND

Personnel at an inner city high school in Michigan decided to implement instruction in two writing strategies (the *Sentence Writing Strategy* and the *Paragraph Writing Strategy*) in all English classes. In September 2000, the district's school board formalized the decision by adopting the *Sentence Writing Strategy* and the *Paragraph Writing Strategy* as part of the district's core curriculum.

STUDENT IDENTIFICATION

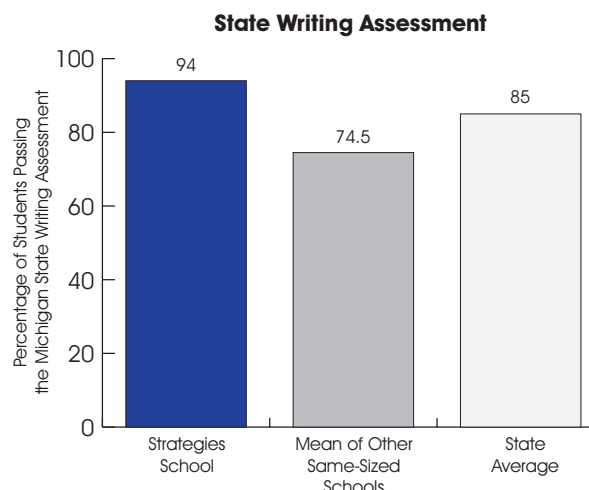
Student participants were all students regularly enrolled in English classes taught by general education teachers.

INSTRUCTIONAL PROGRAM

Students received instruction in the writing strategies within a large-group configuration. Students in the ninth- and tenth-grades learned both writing strategies in their English classes. General education teachers who taught subject-area classes were trained in instructional methods to help students generalize the writing strategies to the subject areas.

RESULTS

The graph depicts the results on the Michigan state assessment in writing for all the students in the high school class of 2001 attending the strategies school. The bar on the left depicts the percentage of students who passed the state writing assessment (94 percent) in the strategies school; the middle bar depicts the average percentage of students who passed the state writing assessment in schools of comparable size to the targeted school (74.5 percent); the bar on the right depicts the average percentage of students who passed the state writing assessment in all schools in Michigan (85 percent).



Strategy Instruction & Tutoring

by Michael F. Hock, Research Associate, University of Kansas Center for Research on Learning*

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,
KUCRL 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 immediate 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.

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

* Hock, M.F. (2001). Strategy instruction & tutoring. *Strategram*, 13(2), 1-5.

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 "**Map out the problem**" by carefully reading the problem, underlining key words, and determining what needs to be solved.

Then, the learner might "**Analyze the problem**" by identifying the type of problem he or she

needs to solve, looking for example problems in the textbook, and estimating the answer.

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

Finally, the learner might "**Have 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

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

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 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

Strategic Tutoring Instructional Phases

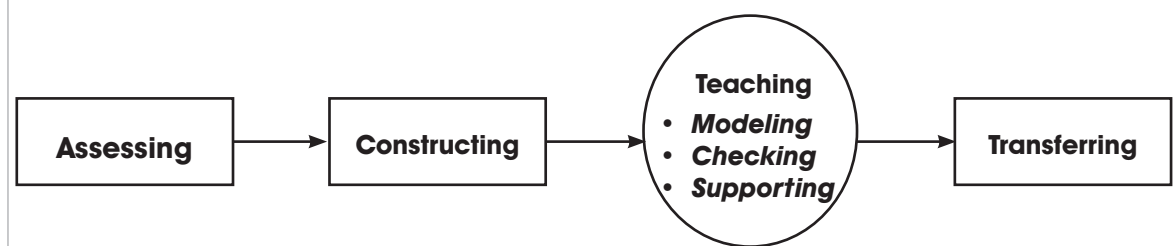


Figure 2

Strategy Instruction

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 F's and D's to C's and B's.

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).

In addition to the improvement in test and quiz 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 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 comparison 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 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 instruc-

tion, one-to-one instruction in literacy skills, and the availability of individualized support services such as language and speech therapy. 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 area in which *Strategic Tutoring* extends SIM.

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Group Think

by Jean Schumaker, Associate Director, Center for Research on Learning,
and Sue Vernon, Edge Enterprises*

Two of the biggest challenges facing today's educators are building safe, caring learning communities with students and teaching students how to treat each other such that everyone feels connected to and a part of the learning community. Recent events, such as those at Columbine High School in Colorado and other schools across the country, have underscored the fact that many students feel isolated and devalued by others in their schools.

A new instructional program from the Center for Research on Learning addresses these challenges. The Cooperative Thinking Strategies Series, for teaching students skills to participate in group situations and for building learning communities, is now complete. The series includes five instructor's manuals specially designed to help students think and work together in caring, positive, and productive ways.

The first manual in the series focuses on the *SCORE Skills*, five basic social skills that students need to work in cooperative groups. These skills are

- **S**hare Ideas
- **C**ompliment Others
- **O**ffer Help and Encouragement
- **R**ecommend Changes Nicely
- **E**xercise Self-Control

Once the *SCORE Skills* have been taught, the teacher can choose one of four cooperative thinking strategies for the next set of lessons. The *THINK Strategy* is a strategy students use to solve problems together. The *LEARN Strategy* is used by students to master information together. The *BUILD Strategy* is designed for analyzing and resolving

controversial issues within a group. Finally, the *Teamwork Strategy* is used by students to work together on a project.

The whole series has been designed to enable teachers to teach students the skills associated with higher-order thinking, teamwork, and community building and to help students meet district and state standards in these areas. Such skills often are difficult to teach because very few structured curricula are available in these areas. They also are difficult to teach because of the abstract nature of higher-order thinking processes and the complexity inherent in getting groups of children with a variety of skills and backgrounds to productively work together.

Therefore, this series has been built upon tried and true instructional principles. Each Cooperative Thinking Strategy is a special sequence of cognitive behaviors, and students learn to use this sequence within a very structured set of lessons. Across a series of six lessons in each instructor's manual, students gradually learn and practice each step in a strategy until they are performing all of the steps in the final lesson together. From that point on, they are ready to practice applying the strategy to subject-area information.

To make them maximally useful, the strategies were designed to be generic; that is, they can be applied to any subject-area content. Thus, they can be taught in conjunction with content in general education classes such as social studies, history, science, and literature classes. They also can be applied to current local or national events or to personal problems or issues the students are encountering in their own lives.

Teachers can choose to emphasize the *SCORE Skills* and one Cooperative Thinking Strategy during a school year, or they can teach several or

* Schumaker, J., & Vernon, S. (2000). Group think. *Strategram*, 12(4), 5-6.

	<u>LEARN</u>		<u>BUILD</u>		<u>THINK</u>	
	Pre	Post	Pre	Post	Pre	Post
Exp. Group	18%	70%	21.4%	80.1%	34%	84%
Control Group	27%	35%	15.1%	19.6%	34%	39%

Figure 1

all of the strategies across the whole year. A team of teachers can each teach one of the strategies and then reinforce use of all of the strategies across the school year. Regardless of the number of strategies taught, students need to practice each of the strategies in a wide variety of situations.

The Cooperative Thinking Strategies Series has been created for heterogeneous classes of students, including students with disabilities. The original development of the strategies was conceived after researchers at the Center for Research on Learning formally observed cooperative group work in many classrooms as part of a large, federally funded project on social skills instruction in classrooms. What they found was disappointing and worrisome. Students with disabilities who had been enrolled in inclusive classrooms were being put down, verbally abused, ignored, shamed, and left out of discussions during cooperative group activities. Moreover, few of the students appeared to know how to work with each other in positive, productive ways. They lacked the basic skills needed to complete fundamental cooperative tasks, and when they were asked to do high-order thinking tasks together, very little was accomplished.

Each lesson in the series incorporates a sequence of instruction that will be very familiar to SIM teachers and easy to follow by neophytes to strategy instruction. The lesson begins with an advance organizer and the definition of new vocabulary words pertinent to the lesson. Then, one step of the new cooperative thinking strategy is described and modeled by the teacher. Next, students practice using the skills involved in the step during a whole-class guided practice activity. They then independently practice the strategy step within their cooperative group and receive feed-

back from the teacher, who circulates throughout the classroom during the activity. Finally, they are given an assignment to complete that is related to the lesson.

The instructional program for teaching each Cooperative Thinking Strategy has been validated through extensive research in general education classrooms in which heterogeneous groups of students were enrolled. At least one research study has been conducted on each Cooperative Thinking Strategy, and each study has involved at least 20 teachers and their students (at least 400 students per study) in urban and suburban schools. The results are consistent across all the studies.

Before instruction, students perform an average of 18 percent to 34 percent of the behaviors associated with the strategy. After instruction, students who receive the instruction perform an average of 70 percent to 84 percent of the behaviors associated with the strategy when they are given a task that they have never seen before. Their performance is significantly higher than the performance of students who did not receive the instruction (see Figure 1).

Teachers and students have been satisfied with the instruction and the strategies and recommend them to others. Teachers have commented that student use of the *SCORE Skills* and the Cooperative Thinking Strategies results in reduced bickering, arguing, and other negative behaviors and increases in productive group work and many positive social behaviors. They say that students who receive the instruction interact in caring ways and help and support each other. Students who have received the instruction state that they enjoy working in cooperative groups and that other students are nicer to them.



Implementation & Sustainability

Strategic Instruction Model

Implementation and Sustainability

is about

**Leveraging Our Investment
to Achieve Outcomes**

**Professional
Development**

is based
on

**In-School
Experts**

is guided
by

**Planning
and Evaluation**

is achieved
only with

**Revision
and Ownership**

requires
the use of

**Success
Support
Systems**

across the

School

for a

Teacher

within a

Department

Overview

The educational literature is filled with documentation about how difficult it is to translate research into practice in today's schools. Too frequently, research-validated practices end up sitting on the shelf. Since its inception, one of the overriding goals of the University of Kansas Center for Research on Learning (KUCRL) has been to develop a host of programs and supports to ensure quality professional development for teachers and administrators.

KUCRL has learned that successful implementation of complex instructional innovations does not result when teachers experience what have come to be known as “spray ‘n pray” or “sit and get” approaches to staff development. KUCRL bases its work in professional development on the following principles and has developed an array of support mechanisms to support quality staff development.

CORE PRINCIPLES DRIVING KUCRL STAFF DEVELOPMENT

- Driven by teacher needs
- Built around teacher choices
- Treat teachers with equality
- Provide ample opportunities for problem solving, feedback, mentoring, and refinement
- Ensure strong administrative support at the building and district level
- Base on interventions that are powerful and easy to implement
- Recognize that meaningful change in educational practice takes time, great effort, and sustained and meaningful support
- Recognize that significant student change requires high-quality instruction in well-designed interventions by numerous teachers over an extended period of time

SUPPORT MECHANISMS TO STRENGTHEN CRL STAFF DEVELOPMENT OUTCOMES

- SIM International Professional Development Network
- SIM regional and international professional development seminars
- SIM instructional manuals and support products
- Content Literacy Continuum
- Instructional coaching
- Stratepedia

SIM Supports

SIM INTERNATIONAL PROFESSIONAL DEVELOPMENT NETWORK

KUCRL supports a network of more than 1,000 individuals who provide professional development to schools and districts in the form of workshops and coaching. Network members regularly attend KUCRL-sponsored conferences to ensure they are knowledgeable about current KUCRL research and SIM products.

SIM REGIONAL AND INTERNATIONAL PROFESSIONAL DEVELOPMENT SEMINARS

KUCRL organizes and presents an international conference each year for members of the International Professional Development Network. To ensure the wide reach of new research, products, and ideas, KUCRL also plans several regional and state conferences as well as a virtual conference alternative. Some of these annual events include activities and sessions designed for SIM teachers and administrators. A complete listing of SIM events can be found on KUCRL's website, <http://kucrl.org/classes>.

SIM INSTRUCTIONAL MANUALS AND SUPPORT PRODUCTS

KUCRL produces a series of videos, CDs, brochures, and other materials to support SIM professional development and classroom instruction. In addition, KUCRL researchers have published instructor's manuals for each learning strategy and Content Enhancement Routine. In some cases, student lesson materials also are available.

KUCRL websites offer additional support for SIM and CLC efforts, including dedicated sites for SIM (<http://sim.kucrl.org>), CLC (<http://clc.kucrl.org>), and higher education faculty (<http://pre-service.kucrl.org>). These sites offer videos, downloads, and other materials.

Our CRL Learns lecture series features noted

leaders in education-related fields. Videos are archived on the CRL Learns website, <http://crl-learns.kucrl.org>.

We also maintain a SIM presence on Facebook (<http://facebook.com/kucrl.sim>) and Twitter (@StrateTweets).

GIST, an easy-to-use interactive software, is a powerful organizing tool that facilitates a visual approach to planning and presenting information. It is designed to promote the use of the evidence-based teaching and planning routines in the Content Enhancement Series developed by KUCRL. GIST helps teachers organize and focus instruction on the critical content tied to helping students meet state standards and benchmarks. It allows teachers to link course, unit, and lesson plans and other multimedia supports. Learn more about GIST at <http://gistplan.com>.

STRATEPEDIA

The Stratepedia web development group uses social media and online collaboration tools to support education research and strategic instruction. Stratepedia offers free online applications for educators committed to strategic instruction and content literacy.

Among Stratepedia's products are Hoxie, collecting real-time data for the Content Literacy Continuum; a Coaching Calendar, promoting scheduling and communication for instructional coaching; Depot, enabling online exchange of Content Enhancement learning devices; and Guidebooks, offering a guided tour of the entire Stratepedia toolkit.

The Stratepedia toolkit is available to select schools employing the Strategic Instruction Model and the Content Literacy Continuum. The development team plans to expand availability. Additional information is available at the Stratepedia website, <http://stratepedia.org>

Content Literacy Continuum

The Content Literacy Continuum is a coordinated, school-wide approach to improving literacy for all students in secondary schools, enabling them to meet higher standards. The CLC implementation team works with administrators, teachers, and staff to help secondary schools develop and sustain a standards-based plan to improve literacy and content area learning.

LEVEL 1: CONTENT MASTERY

Students learn critical content required in the core curriculum regardless of literacy levels.

Teachers compensate for limited levels of literacy by using Content Enhancement routines to promote content mastery and by making the necessary modifications for students with learning problems.

What it looks like: For example, the history teacher introduces a unit on “Causes of the Civil War” by co-constructing with students a Unit Organizer that depicts the critical content demands of the unit. The organizer is used throughout the unit to link student prior knowledge to the new unit and to prompt learning strategies such as paraphrasing and self-questioning. Other routines are used to ensure that critical vocabulary is developed.

Professional development: Core curriculum teachers learn and implement Content Enhancement Routines throughout every unit across the year.

LEVEL 2: EMBEDDED STRATEGY INSTRUCTION

Students are introduced to and learn to use broad learning strategies for increasing literacy across their core curriculum classes.

Teachers directly teach and then embed instruction in selected Learning Strategies in core curriculum courses. Teachers use direct explanation, modeling, and group practice to teach

the strategy and strategy steps and then prompt student application and practice in content-area assignments.

What it looks like: For example, at the beginning of the year, the history teacher explains that being able to paraphrase the history text is important because paraphrasing is required to write reports, answer questions, and discuss ideas. The teacher shares the steps of the *Paraphrasing Strategy* (RAP) with students and models how to paraphrase history text to complete different types of learning tasks. Class activities and assignments are designed to require students to paraphrase text and use information. Both oral and written information is paraphrased. Paraphrased responses may take an oral or written format. The Unit Organizer is used to model and prompt paraphrasing of critical chunks of content. The teacher continually evaluates and provides feedback to encourage high quality paraphrasing throughout the year.

Professional development: Content teachers learn selected Learning Strategies (*Paraphrasing, Self Questioning, Visual Imagery, Word Identification, textbook usage, Sentence Writing, Paragraph Writing, Theme Writing...*)

LEVEL 3: EXPLICIT STRATEGY INSTRUCTION OPTIONS

Students who have difficulty mastering the strategies presented across courses by core curriculum teachers learn them through specialized, more direct, more intensive instruction delivered by support personnel.

Support personnel provide more intensive instruction via supplemental instructional sessions delivered in the general education classroom, in a pullout program, through the offering of a separate course, or through beyond school programs.

What it looks like: For example, the history teacher notices that some students in the class are

Professional Development

struggling with paraphrasing. Support personnel develop a plan to reintroduce the steps of the *Paraphrasing Strategy* (RAP) to this group of students. Support personnel provide additional models and practice in paraphrasing text. Support personnel may guide the student through paraphrasing paragraph-by-paragraph, gradually encouraging students to paraphrase more independently. Explicit feedback and additional practice are provided. Support personnel may work daily for 15-20 minutes a day for three or four weeks until the student gains confidence and masters applying the strategy. As the strategy is learned, the student sees the strategy being required in his history class and other classes and gets the message that this is a valued skill that is worth learning.

Professional development: Support personnel and teachers learn specific Learning Strategies and a process for more strategic tutoring.

LEVEL 4: INTENSIVE SKILL DEVELOPMENT COURSES

Students develop decoding skills and increase reading fluency through specialized, direct, and intensive instruction in reading. Intensive instruction in listening, speaking, and writing is often a part of these services.

Reading specialists, special education teachers, and speech-language pathologists team to develop intensive and coordinated instructional experiences designed to address severe literacy deficits. Reading specialists and special education teachers will most likely deliver these services. They also assist content teachers in making appropriate modifications in content instruction to accommodate severe literacy deficits.

What it looks like: For example, some students appear to have significant difficulty comprehending because they do not have sufficient decoding skills or they have language problems. Sometimes, these problems are identified before strategy instruction begins and sometimes the

problems emerge during strategy instruction. The staff as a team develop options for courses and support services that directly address deficits that cannot be addressed through less intensive efforts. However, the students can still participate in the history class because the teacher is presenting content in ways that take into consideration poor reading strategies. Intensive research-based programs such as The Corrective Reading Program or Language! are typically chosen as the curriculum to develop these types of services.

Professional development: Reading specialists and special education teachers learn approaches to teaching literacy skills and strategies to students with disabilities.

LEVEL 5: INTENSIVE CLINICAL INTERVENTION OPTIONS

Students with underlying language disorders learn the linguistic, related cognitive, metalinguistic, and metacognitive underpinnings they need to acquire content literacy skills and strategies in intensive clinical 1-1 instructional settings.

Speech-language pathologists deliver curriculum-relevant language therapy in collaboration with other support personnel teaching literacy. They assist content teachers in making appropriate modifications in content instruction to accommodate language disorders.

What it looks like: For example, students identified as language impaired may have difficulty learning the *Paraphrasing Strategy* even when it is taught by learning strategists in a language-sensitive fashion. They may need therapeutic intervention delivered by a speech-language pathologist to address the linguistic and metalinguistic underpinnings of the *Paraphrasing Strategy* (RAP) and the academic content.

Professional development: Speech-language pathologists learn curriculum-relevant approaches to language therapy that interface with other intensive intervention provided to students.

Instructional Coaching

KUCRL supports a model of professional development that includes follow-up coaching. Successful implementation of complex instructional methods takes time, effort, and sustained and meaningful support. Instructional coaching is a key component of sustained, effective professional development.

Instructional coaches are on-site professional developers who teach educators how to use proven teaching methods. They employ a variety of professional development procedures to foster widespread, high-quality implementation of interventions, providing “on-the-job learning.” Instructional coaches who adopt the methods developed at KUCRL take a partnership approach, and thus they respect teachers’ professionalism and focus their efforts on conversations that lead to creative, practical application of research-based practices.

Instructional coaches see themselves as equal partners with teachers in the complex and richly rewarding work of teaching students. More than anything else, instructional coaches work in partnerships to accelerate teachers’ professional learning through mutually enriching, healthy relationships. Instructional coaches are colleagues, friends, and confidants who listen with care and share valuable information with teachers when teachers most need it.

The Kansas Coaching Project, a division of KUCRL, conducts research on instructional coaching and sponsors workshops and conferences to share instructional coaching research and best practices. More information can be found at the Kansas Coaching Project website, <http://instructionalcoach.org>.