

Research based? SIM is!

A recent study of the conditions of teaching in special education found that often there is an insufficient focus on improved student outcomes (Kozleski, Main-zer, & Deshler, 2001). This finding from the Council for Exceptional Children study is troubling, especially so in light of some recent, highly significant shifts in education policy.

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First, in the 1997 reauthorization of the Individuals with Disabilities Education Act, schools for the first time were explicitly directed to measure the outcomes achieved by students as a result of the special education services provided.

Second, with the No Child Left Behind Legislation (2001) and the publication of *A New Era: Revitalizing Special Education for Children and Their Families* (President's Commission on Excellence in Special Education, 2002), the emphasis on achieving positive outcomes for students outlined in IDEA 1997 was strongly underscored; however, the bar was set even higher for educators by the No Child Left Behind act's call for all students to be taught with "scientifically based instructional practices."

A belief shared by both Congress and the Administration is that effective educational reform must be linked to educational practices that are solidly grounded

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Rigorous Standards

SIM 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:

- Instructional procedures must be palatable for teachers.
- The instructional procedure must have value and be perceived to have value by high-achieving and average-achieving students.
- The procedure must be sufficiently powerful to have an effect on low-achieving students.
- The procedure must result in statistically significant gains for students.
- The procedure must result in socially significant gains for students.
- The degree to which students maintain a skill or strategy and generalize it for use in other settings is important in determining whether an instructional procedure is successful and has merit.

in research.

This article describes instructional principles associated with the Strategic Instruction Model that are in alignment with these legislative and policy changes.

Critical Domains of Instruction

Center for Research on Learning researchers have found that the teachers who achieve the greatest gains with students

are those whose instruction is consistently responsive, systematic, and intensive. These teachers are not only knowledgeable about what is involved in each of these instructional domains but, through much practice, also have learned to integrate them within all aspects of their instruction.

The emphasis given to each domain varies from one teaching situation to another depending on the needs of the students and where students are in the process of mastering an instructional target. A master teacher very carefully calls upon elements from each of these domains, in varying degrees, to optimize student learning and success.

It is our contention that these factors are at the heart of all effective instruction—whether a student is being taught a unit of subject matter content (in science, for example) or a learning strategy to facilitate learning subject matter content.

Responsive Instruction

Responsive instruction is a way of making teaching decisions in which a student's reaction to instruction directly shapes how future instruction is provided.

Responsive instruction involves grounding key moment-to-moment as well as long-range teaching decisions on the unique learning characteristics of students.

This, of course, implies that teachers need to know a lot about their students, especially those with special learning needs.

Students who have difficulty learning often do so because they have difficulty processing information. Students can have great difficulty in acquiring, remembering, and retrieving information, as well as conveying what they know and demonstrating competence.

Likewise, these students typically lack much of the necessary background information and prior knowledge required to understand what is being taught.

Therefore, it is imperative for teachers to be sensitive to the difficulties that these students encounter while learning and be prepared to adjust

Instructional Components

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.

Both Learning Strategies and Content Enhancement Routines have been successfully field-tested in public schools. For both, research has demonstrated that consistent and explicit instruction and support are key for instructional success.

their instruction accordingly.

Teachers who adhere to the principle of responsive instruction regularly do three things during their teaching: They continuously assess student learning, they make specific instructional accommodations to meet student needs, and they provide elaborated feedback.

Continuous Assessment

Continuous assessment is an element of responsive instruction in which the teacher regularly monitors student performance to determine how closely it matches the instructional goal. Ideally, these checks should occur during and after as many practice sessions as possible.

Students learn most quickly when instruction is based on a continuing assessment of the learner's progress and his or her response to previous attempts at instruction.

For students who experience difficulty in learning, continuous assessment probes are often conducted daily, usually are informal, and are done using classroom materials. They should provide information about what the student is learning and which instructional procedures need to be changed altogether or adapted to make the instruction more responsive to student needs. Sometimes, instructional procedures simply need to be more thoroughly implemented or intensified.

At the early stages of instruction, assessment can be as simple as regularly checking to be sure that desirable and realistic goals have been set. As instruction progresses to skill practice, assessment

8-Stage Instructional Process

SIM's Stages of Acquisition and Generalization process is a research-validated method of teaching learning strategies to students. 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. Assessment and feedback are integral parts of this process. The following are the eight stages:

- Stage 1: Pretest and Make Commitments
- Stage 2: Describe
- Stage 3: Model
- Stage 4: Verbal Practice
- Stage 5: Controlled Practice and Feedback
- Stage 6: Advanced Practice and Feedback
- Stage 7: Posttest and Make Commitments
- Stage 8: Generalization

should be regularly embedded in learning activities to determine whether instructional procedures and sequences are working.

It is often easy to overlook one of the most obvious and most important sources of assessment information—the student. The student should be asked how well the things the teacher is using seem to be working and whether he or she has any feedback to give to the teacher to help make learning go better.

Obviously, some students will have difficulty in expressing themselves and providing such information to the teacher—they may be shy, they may have difficulty verbalizing their thoughts, or they may not be aware of what is happening with regard to their learning. Regardless, it is always important to involve the student to the greatest extent possible so he or she feels a strong sense of commitment and ownership in the entire learning process.

Instructional Accommodation

Instructional accommodation is an element of responsive instruction in which changes in instructional groupings, materials, or teaching techniques are made to increase student performance.

Instructional accommodations should be made on the basis of the unique information processing characteristics of the students being taught.

Making specific instructional accommodations promotes more responsive instruction in a variety of ways.

First, students who are not successful in a large group may need to be grouped in a smaller group, regrouped with other students, or provided with one-to-one instruction. The goal of regrouping is to increase the amount of time that can be spent practicing needed skills at the pace and level appropriate for the student.

Second, it is important that students be placed as close to their instructional level as possible to minimize frustrations they encounter and to maximize the benefits they can receive from instruction and practice activities. This may mean select-

ing materials that are different from materials that other students are using. It also may mean that some materials may have to be adapted or altered.

Third, teachers may need to adjust the nature of the instruction to increase student understanding. This involves making the necessary accommodations to reduce or eliminate the effect of the information-processing difficulties on learning. For example, it is often helpful if a student has the opportunity to process information in multiple ways—visually, auditorially, interactively, and so on.

Elaborated Feedback

Elaborated feedback is an element of responsive instruction in which the results of student performance on a practice task are shared with the student to help him or her understand what was done correctly and what specific things need to be targeted for improvement during the next practice exercise. Students with LD almost always require that feedback be more detailed or elaborated.

During elaborated feedback, teachers should do four things.

First, they should help students see and categorize the errors made in a practice exercise so the students can better understand how they are performing.

Second, they should select and re-teach one of the error types. The re-teaching may involve modeling the appropriate skill or strategy for the students.

Third, teachers should ask students to paraphrase the main elements of the feedback given to them.

Finally, teachers should set goals for performing the targeted skill or strategy correctly during the next practice attempt.

Providing elaborated feedback to students is an effective way to individualize instruction and to be responsive to the unique needs of students.

Systematic Instruction

Systematic instruction is a way of organizing learning experiences so that both the teacher and the student follow and continuously review a dynamic plan related to how new content will be learned and how that new content relates to past and future learning.

Systematic instruction involves deliberately orchestrating what and how different skills, strategies, and content are taught to students.

When instruction is systematic, students can more easily understand, learn, and apply targeted information. In contrast, when instruction is not well planned, it tends to lack the consistency and predictability that help compensate for the difficulties in mastering and remembering information that characterize the learning of students with learning disabilities.

Systematic instruction regularly has the following four characteristics: It is structured, connected, scaffolded, and informative.

Structured Instruction

Systematic instruction can be achieved by increasing the amount of structure in both the information and the way information is taught.

Students with LD often have difficulty processing large amounts of information, especially when that information involves complex concepts or multistep procedures. Teaching methods that

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.

emphasize unstructured explorations, discussions, or group investigation during the early acquisition of new skills or information are not likely to be successful.

Instead, information should be broken into smaller “chunks” or steps, and then these chunks should be taught in sequential stages that involve direct explanation, modeling, and practice and that are designed to promote mastery at each level.

Small steps are more readily accomplished and will help keep learners engaged. In addition, such lessons promote the success of students and help build their

confidence as learners.

During this process, the diverse learning characteristics of students should be carefully considered. Students with LD may not have the questioning strategies and background knowledge required to independently organize new information in ways that help them understand and remember it.

Connected Instruction

Regularly helping students understand the connections between the different parts of information that they are learning is another way to make instruction more systematic.

Connected instruction is a way of teaching systematically in which the teacher continually shows and discusses with the students the relationship between what has been learned, what is being learned, and what will be learned. This aspect of instruction is just as important as breaking information into manageable chunks.

A unit map is an effective tool for helping students see how information is connected. Unit maps can show students the big picture of the various pieces of information to be learned and how these

Instruction is ‘structured’ when information is chunked into pieces that are manageable for the student to learn.

various pieces relate to one another and fit together.

Such a teaching tool provides a road map for what has been learned and what will be learned.

When this map is constructed and expanded with the students, it can be used to draw attention to connections among pieces of information that have been learned. It also can be used to review and discuss progress.

By using these maps, students not only can see the sequence of instruction that the teacher will be following but also how the various strategies are related. Such maps can help students see the importance of applying the skills and strategies that they learn to a broad array of situations, thereby promoting the overall generalization of the newly learned strategy.

Scaffolded Instruction

Instruction is 'connected' when teachers deliberately show students how information is linked together and related.

Scaffolded instruction, or scaffolding, is a way of teaching systematically in which the teacher provides a significant amount of support to students early in the learning process in the form of modeling, prompts, direct explanations, and targeted questions. As students begin to acquire mastery of the targeted objectives, direct teacher supports are reduced and the major responsibility for learning is transferred to the student.

The importance of scaffolding can be seen in construction work. When construction workers build a large office building, they rely on scaffolding to provide the necessary support as they lay bricks, paint, and complete other construction tasks.

Similarly, good teachers build in a great deal of support in the early stages of learning and help the learner complete tasks. They help with the construction of learning.

The Unit Organizer Routine

...and the Unit Organizer visual device are tools to help students see how information is connected. They are used to show how units, critical information, and concepts are related. Research results showed that 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.

Thus, the learner, like the construction worker, is able to complete tasks that would have been impossible to accomplish without the support or scaffolding.

Knowing how much support to provide to students during the learning process requires careful judgment by the teacher. The goal is to provide just enough and not too much or too little! Obviously, the amount of scaffolding required varies from student to student and from one type of skill to another.

One of the best ways to provide the right amount of scaffolding is by asking students about the task at hand. You might ask students questions such as "What do you need to do first?" "What do you need to do next?" "How did you get that answer?" "Why do you think you got that answer?" "How would you explain what you did to someone else?"

By asking such questions, you model the self-questioning that experts use to guide their work and that you want students to use on their own.

Through systematic questioning, teachers can prompt students to ask and answer questions about the task to gain information about how they

Scaffolding

...is inherent in SIM's eight-stage instructional process. In early stages of instruction, much of the responsibility for student learning rests with teachers as they describe and model strategy steps. By *Stage 6: Advanced Practice and Feedback*, as students practice applying the strategy, instructional prompts and cues given liberally in earlier stages fade and students are encouraged to analyze their own performances.

Instruction is ‘informative’ when the teacher makes certain that students are informed about how the learning process works, what is expected during instruction, and what specific things the students can do to improve their learning and performance.

are thinking about it. This interactive questioning creates a context that can be used to make instructional decisions about how much support or scaffolding will be needed in the future to guide the learning process.

Informative Instruction

Informative instruction is a way of teaching systematically in which the teacher ensures that students understand how they are learning, how they can plan and control their learning at each step of the learning process, and why this is important.

Students with LD often have not developed the necessary self-monitoring and self-evaluation strategies to track their learning progress, so they don't know how much progress they have made or what goals they should be trying to reach.

Among the important components of informative instruction are the following:

- Keep students informed of when, how, and under what conditions learning or performance will occur. For example, remind students about what they have done and what will be expected of them next: “Today, we learned to identify the main idea” or “Tomorrow, you will be expected to do this on your own.”
- Cue students to set goals and monitor their progress toward reaching those goals. For example, having students chart their progress on how many words per minute they can read helps them know they are progressing toward a goal. If they get discouraged, you can use the chart to show them how much progress they really have made.
- Communicate each lesson's organization, purpose, and expectations to help orient and engage students. Taking two to three minutes at the beginning of each lesson to refer to a lesson or unit map—or another visual organizer—helps students connect what they are learning with what they have learned before. Stating what

the goals are at the beginning of the lesson, and having students repeat them, helps students to understand what they are expected to learn by the end of the lesson. Such an introduction also gives the teacher a chance to elicit student questions about what they are going to learn and can reduce the chances of students becoming

confused and lost. For many students, this orientation may be nice to have, but not necessary for learning. However, for students with LD, it is an essential part of helping them focus their attention on the lesson.

Intensive Instruction

Intensive instruction is a way of directing student attention in which sufficient time is spent

Having students look back at where they were and how much they have improved can motivate students to continue to put forth effort to become better learners.

in teacher-guided interactive learning activities characterized by a high degree of goal-directed student engagement that leads to student mastery and generalization.

Intensive instruction involves helping students maintain a high degree of attention and response during instructional sessions that are scheduled as frequently and consistently as possible.

In other words, a key factor affecting learning is both the amount of time in instruction and how effectively each instructional moment is used in engaging students in activities that contribute to their learning.

Sufficient Time

Sufficient time is an element of intensive instruction in which interactive teaching and learning experiences are sustained until the critical information has been mastered, maintained, and generalized by the student.

Once a commitment is made to achieving an instructional goal, it must be taken seriously.

There are often a host of competing demands in the classroom and many of these things can

easily distract teachers from working on the instructional goals that they have set for their students.

Teachers must continually weigh these competing demands on their time and their students' time and never lose sight of the fact that any time taken away from targeted and well-focused instruction is often very difficult, if not impossible, to make up.

For students who struggle with learning, the loss of these instructional minutes can take a significant toll.

Practicing a new skill on a sporadic schedule, especially in the early phases of the learning process, is like learning it over again every time.

Thus, one of the key dimensions of intensive instruction is committing the necessary time on a consistent basis for instruction and practice opportunities.

For students with LD, this means that progress is contingent on daily instruction that is sustained until the skill is mastered and generalized.

High Engagement

High engagement is an element of intensive instruction in which each instructional moment is maximized through the use of activities that keep the students' attention focused on critical learning outcomes.

Because the overall amount of instructional time is so limited and the challenges facing students with LD so great, it is imperative that each session be exceedingly well planned.

Instruction should demand a high degree of learner attention and response, as well as your statements of high expectations to students, and your evaluation and feedback of their responses.

It is important to emphasize that intensive instruction does not mean activities that involve excessive drilling. During this type of instruction, students' attention is minimal; they are rarely engaged and benefit little, if at all, from the instruction.

Rather, intensity during instruction is achieved by a progressive pace, frequent question/answer interactions, and frequent activities that require a physical response (for example, pointing, writing, raising hands, repeating).

Intensity also can be achieved through reflective or open-ended questions if the activities are focused on an outcome, engage interest, and maintain the student's attention.

An effective tool for increasing the instructional intensity is student goal setting.

To the extent that students are knowledgeable about what the teacher is trying to accomplish instructionally and are actively engaged in setting goals that they want to work on during each instructional session, student engagement increases.

It is important for students to feel that they are partners in the learning process. To the extent that they feel a vested interest in what they are expected to learn, they will be more inclined to attend and remain engaged throughout a session.

After a session, students should take a few minutes to assess how close they came to

reaching their goals and to evaluate how engaged and attentive they were and how hard they tried. This will communicate to them the important message that they play a key role in determining how quickly they will reach their goals.

Student Motivation and Goal Setting

Possible Selves is a program designed to increase student motivation by having students discuss their future lives. Researchers have found that once students have examined possible selves, they are more inclined to believe they can do well in school and in life. They begin to view learning as a pathway to their hopes and expectations and as a way to prevent feared possible selves from materializing. Learning becomes relevant, and students increase their willingness to put forth effort and commitment to learning.

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