

# Direct Instruction

## news

ADI Effective School Practices

DON CRAWFORD and RANDI SAULTER, Editors

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BRYAN WICKMAN, Executive Director, Association for Direct Instruction

## ADI News: Recommended Reading

Because Congress is now conducting hearings on the New England Patriots' filming of other teams' practices, it would appear the Reading First "scandal" is old news and no longer has any political value. As a citizen, I am amazed that there is anything remotely political about educating our children, but clearly there is. The Fordham Foundation just published a report, *Too Good to Last: The True Story*

*of Reading First*. This report, written by Sol Stern with a forward by Chester Finn and Michael Petrilli, does an excellent job of analyzing how one of the best ideas to come out of Washington in a decade got mired down in politics. It is worth going to [www.edexcellence.net/doc/reading\\_first\\_030508.pdf](http://www.edexcellence.net/doc/reading_first_030508.pdf) to download the (short) 38-page document.

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## *Contribute to DI News:*

*DI News* provides practitioners, ADI members, the DI community, and those new to DI with stories of successful implementations of DI, reports of ADI awards, tips regarding the effective delivery of DI, articles focused on particular types of instruction, reprints of articles on timely topics, and position papers that address current issues. *The News'* focus is to provide newsworthy events that help us reach the goals of teaching children more effectively and efficiently and communicating that a powerful technology for teaching exists but is not being utilized in most American schools. Readers are invited to contribute personal accounts of success as well as relevant topics deemed useful to the DI community. General areas of submission follow:

**From the field:** Submit letters describing your thrills and frustrations, problems and successes, and so on. A number of experts are available who may be able to offer helpful solutions and recommendations to persons seeking advice.

**News:** Report news of interest to ADI's members.

**Success stories:** Send your stories about successful instruction. These can be short, anecdotal pieces.

**Perspectives:** Submit critiques and perspective essays about a theme of current interest, such as: school restructuring, the ungraded classroom, cooperative learning, site-based management, learning styles, heterogeneous grouping, Regular Ed Initiative and the law, and so on.

**Book notes:** Review a book of interest to members.

**New products:** Descriptions of new products that are available are welcome. Send the description with a sample of the product or a research report validating its effectiveness. Space will be given only to products that have been field-tested and empirically validated.

**Tips for teachers:** Practical, short products that a teacher can copy and use immediately. This might be advice for solving a specific but pervasive problem, a data-keeping form, a single format that would successfully teach something meaningful and impress teachers with the effectiveness and cleverness of Direct Instruction.

**Submission Format:** Send an electronic copy with a hard copy of the manuscript. Indicate the name of the word-processing program you use. Save drawings and figures in separate files. Include an address and email address for each author.

**Illustrations and Figures:** Please send drawings or figures in a camera-ready form, even though you may also include them in electronic form.

Completed manuscripts should be sent to:

ADI Publications  
P.O. Box 10252  
Eugene, OR 97440

Acknowledgement of receipt of the manuscript will be sent by email. Articles are initially screened by the editors for placement in the correct ADI publication. If appropriate, the article will be sent out for review by peers in the field. These reviewers may recommend acceptance as is, revision without further review, revision with a subsequent review, or rejection. The author is usually notified about the status of the article within a 6- to 8-week period. If the article is published, the author will receive five complimentary copies of the issue in which his or her article appears.

### *Recommended Reading...*

*continued from page 1*

Another good read is the recently published book by Zig Engelmann. *Teaching Needy Kids in Our Backward System* was released in January by ADI Press. The manuscript was published on Engelmann's website last year and was well received by around 800 readers. Our hope is that by publishing the book in a traditional format it will gain some attention in the mainstream media and inform the public of the outrageous behavior of the educational establishment. Zig has offered to autograph copies for ADI members. Order yours by phone, mail or Internet. See page 5 for additional information. [ADI](#)

## *ADI Excellence in Education Awards*

Each spring, ADI issues a call for nominations for the ADI Excellence in Education Awards. You should have received your packet by now. For more than 20 years, ADI has supported an awards and recognition program. Direct Instruction teachers at times do not get the rich recognition they deserve. Our awards and recognition program provides a venue to highlight achievement on a school, teacher, or individual student level. Please look over the packet and consider making a nomination.

One of the recognitions given is the Susie Wayne Scholarship. Susie Wayne was a young and upcoming researcher, supervisor, and teacher.

She was stricken with what eventually was diagnosed as lupus and passed away in 1996. Throughout her illness she maintained a tireless spirit and great sense of humor. She touched many lives and was a great friend to many in the Direct Instruction community. In memory of her dedication to effective education for all students, the ADI Board of Directors established the Susie Wayne Scholarship. In the past, this essay contest has been open only to graduate-level college students majoring in education. Starting this year the essay competition is open to all educators as well as to college students. If you haven't already submitted your essay, we urge you to do so.

SRA/MCGRAW-HILL

## Success Stories

### *Special Education Students See Dramatic Improvement With Direct Instruction*

Special education students in Grades 9 and 10 at Pioneer Valley High School in Santa Maria, CA, achieved more than one year of reading growth after only six months with SRA/McGraw-Hill's Direct Instruction.

"If you can get special education students to increase one year in one year, you're doing well. But to achieve this kind of progress is amazing," said Paul Collier, special education teacher.

In August 2004, Collier and his colleagues began using Direct Instruction's *Corrective Reading, Reasoning and Writing*, and *Spelling Through Morphographs* with special education students in Grades 9 and 10. They tested students before the programs began

and then six months later in March. The average student achieved one year and four months of growth (see Figure 1).

About 9% of the student population at Pioneer Valley High School receives special education services. Classes are taught in blocks of 90 minutes, which means students go to one room for reading instruction, another for writing, and another for math.

"Our students are grouped homogeneously, so teaching in blocks really works well, especially with Direct Instruction," Collier said. "When a student is ready to move up a level in reading, he just goes to a different classroom because all of us are teach-

ing reading at the same time. That means the transition is seamless."

#### **Why Direct Instruction Works Well for Special Education Students**

When someone asks Collier why the program works well for his students, his response is simple.

"It's the repetition," he said. "Since about 90% of each lesson is repetition, the kids feel instant success because they remember some of the concepts from the day before. So many of these students have been frustrated in school year after year, but with Direct Instruction, they finally get it, and they take off."

Collier said he has taught special education students at other schools, but never had the kind of success he has had with Direct Instruction.

"Students really stay on track with Direct Instruction because it is scripted," he said. "I've used other

*continued on page 5*

## *Everyone likes getting mail...*

ADI maintains a listserv discussion group called DI. This free service allows you to send a message out to all subscribers to the list just by sending one message. By subscribing to the DI list, you will be able to participate in discussions of topics of interest to DI users around the world. There are currently 500+ subscribers. You will automatically receive in your email box all messages that are sent to the list. This is a great place to ask for technical assistance, opinions on curricula, and hear about successes and pitfalls related to DI.

**To subscribe to the list, send the following message from your email account:**

To: majordomo@lists.uoregon.edu

In the message portion of the email simply type:

subscribe di

(Don't add *Please* or any other words to your message. It will only cause errors. majordomo is a computer, not a person. No one reads your subscription request.)

**You send your news and views out to the list subscribers, like this:**

To: di@lists.uoregon.edu

Subject: *Whatever describes your topic.*

Message: *Whatever you want to say.*

The list is retro-moderated, which means that some messages may not be posted if they are inappropriate. For the most part inappropriate messages are ones that contain offensive language or are off-topic solicitations.

The schools and organizations listed below are institutional members of the association for Direct Instruction. We appreciate their continued support of quality education for students.

Aloha Huber Park  
*Beaverton, OR*

American Preparatory Academy  
*Draper, UT*

Baltimore City Public School System  
*Baltimore, MD*

Barren County Board of Education  
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Cache Valley Learning Center  
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Donald Stewart Center for Early Childhood Ed.  
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Educational Resources, Inc.  
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Foundations for the Future Charter Academy  
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Frank Elementary School  
*Kenosha, WI*

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Granite School District  
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Mountain View Academy  
*Greeley, CO*

Mt Pleasant Cottage School UFSD  
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Navigator Pointe Academy  
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Sto-Rox School District  
*McKees Rocks, PA*

The Gregory School for Exceptional Learning  
*Ancaster, ON*

Tri City Elementary  
*Myrtle Creek, OR*



**Improvement**, continued from page 3  
programs, but the kids never stayed on track the way they do now.”

Eric Jeffres is another special education teacher at Pioneer Valley High School. He echoed Collier’s thoughts about repetition and scripting, but added one more benefit to the list: oral response.

“Oral response keeps all the kids engaged,” Jeffres said. “They have to pay attention, be involved, and learn.

“Since they are so engaged, they actually raise their hands to read,” he added. “Do you know how hard it is to get a 14- or 15-year-old to raise his hand and participate in class? My kids actually get upset when they can’t read!”

Teachers feel so confident with Direct Instruction that they began using it with Grade 11 students in the 2005-06 school year and included Grade 12 students during the 2006-07 school year.

“What’s really exciting is to think how much more the students will achieve

as teachers get better at teaching the programs,” Collier concluded.

### About Pioneer Valley High School

Serving 1,340 students in Grades 9-12, this school’s student population is 17% Caucasian, 74% Hispanic, and 9% multi-cultural. Forty-three percent of the children qualify for free or reduced-price lunches, and 9% receive special education services. For more information about Pioneer Valley High School, visit [www.smjuhsd.k12.ca.us/pioneer\\_valley](http://www.smjuhsd.k12.ca.us/pioneer_valley).

### For More Information

If you would like to learn more about success with Direct Instruction pro-

grams in your school or district, please contact SRA at 1-888-SRA-4543. **ADI**

### *Pioneer Valley High School, Santa Maria, CA*

#### About the School:

Grades:	9-12
Number of students:	1,340
Test(s):	MAST
Reduced-price lunch:	43%

#### About the Students:

African American:	—
Caucasian:	17%
Hispanic:	74%
Asian:	—
Other:	9%
ELL	—

**Figure 1**

*Average Growth in Reading in Grade Equivalents (GE)*

Year	All Students	Grade 9 Students	Grade 10 Students
2004*	3.45 GE	3.74 GE	2.97 GE
2005	4.82 GE	5.14 GE	4.30 GE

Source: Multilevel Academic Survey Test (MAST)

\*Before Direct Instruction began.

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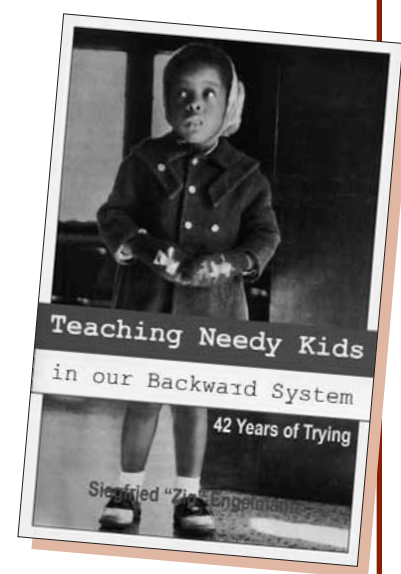
### *Teaching Needy Kids in Our Backward System*

The Association for Direct Instruction is proud to publish Siegfried “Zig” Engelmann’s newest book, *Teaching Needy Kids in Our Backward System*. This book chronicles Zig’s history in education. More than just a memoir, the book details how our educational system has failed to embrace solutions to problems the establishment claims it wants to solve. You will find this a fascinating read as well as shockingly revealing.

Zig has signed a limited quantity of the book to be made available only through ADI. ADI is offering these autographed copies at a special introductory price of \$25.00 plus \$4.00 S&H, discounted from the list price of \$32.00. Order your autographed copy today by calling, faxing or ordering online.

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# Success Stories

## Reading Mastery Plus Helps Colorado School Achieve AYP for First Time

When district administrators put Ivywild Elementary School in Colorado Springs, CO, on a school improvement plan at the start of the 2003-04 school year because of poor test scores, they asked teachers to use Direct Instruction's *Reading Mastery Plus* from SRA/McGraw-Hill in Grades K-5. After one year with the program, the school achieved Adequate Yearly Progress and no longer needed a school improvement plan.

Before *Reading Mastery Plus* began, only 43% of Grade 3 students and 35% of Grade 5 students scored Proficient or Advanced in reading on the Colorado Student Assessment Program (CSAP).

By 2005, students in both grades attained the highest reading scores in school history: 67% of Grade 3 and 55% of Grade 5 scored Proficient or Advanced in reading. Even more remarkable is how students in Grades 3-5 are moving through CSAP's scoring levels: Unsatisfactory (U), Partially Proficient (PP), Proficient (P), and Advanced (A) (see Figure 1).

Literary resource teacher Cathy Whitney said during the first year of implementation, teachers watched students in all three grades move from Unsatisfactory to Partially Proficient. During the second year of *Reading Mastery Plus*, they saw movement from Partially Proficient to Proficient and Advanced.

"*Reading Mastery Plus* sparked a shift in paradigm at our school and has been a huge factor in student success," she said. "Before the program began, teachers were teaching in isolation; in other words, each teacher was in her own classroom teaching her own way. *Reading Mastery Plus* became a model of collaboration for us. I have watched the program blossom as it took our teachers out of isolation and into a collaborative environment in which the children reap the benefits. Now everyone is using the same curriculum, and students understand the process. It truly has been awesome to watch this process."

### Discipline Problems Disappear

Now that students are taught at their instructional level, Whitney said discipline problems have disappeared.

"Some students who had discipline issues were acting out because of frustration," she said. "Now they are succeeding with *Reading Mastery Plus*, and their level of frustration is gone."

### About Ivywild Elementary School

Serving more than 135 students in Grades K-5, this Title I School's student population is 49% Hispanic, 47% Caucasian, and 4% African American. Ninety-two percent of the children qualify for free or reduced-price lunches, and 44% are English Language Learners. The school achieved AYP in 2003 and 2004. For more information about Ivywild Elementary School, visit [www.d11.org/ivywild](http://www.d11.org/ivywild).

### *Ivywild Elementary School, Colorado Springs, CO*

#### About the School:

Grades:	K-5
Number of students:	135
Test(s):	CSAP
Reduced-price lunch:	92%

#### About the Students:

African American:	4%
Caucasian:	47%
Hispanic:	49%
Asian:	—
Other:	—
ELL	44%

**Figure 1**

*Percentage of Ivywild Students Meeting Proficiency Levels  
in State Reading Standards*

Year	Grade 3				Grade 4				Grade 5			
	U	PP	P	A	U	PP	P	A	U	PP	P	A
2002-2003*	30	27	40	3	32	42	23	0	35	23	35	0
2003-2004	8	50	25	0	32	42	23	0	22	44	30	4
2004-2005	5	29	67	0	14	36	24	0	23	23	50	5

Source: Colorado Student Assessment Program (CSAP)

\*Before *Reading Mastery Plus* began.

## Help us out!

Contribute your story of success with DI! We want to hear from you!

You all have stories and it is time to share them. This is *your* journal—let it reflect your stories!

See the directions on page 2 on how to make a contribution. You'll be glad you did.

# Success Stories

## Cleveland School Keeps Reading Mastery as Curriculum Core

Grade 4 students at Louisa May Alcott Elementary School who have used Reading Mastery and Language for Learning since Kindergarten are achieving excellent results on state reading tests. The percentage of the Cleveland, OH, school's Grade 4 students passing the Ohio Proficiency Test in 2002 more than doubled compared to Grade 4 students who took the test in 1998 without the benefit of these two Direct Instruction programs. By 2006, 80% of Grade 4 students passed the reading portion and 100% passed the writing portion of the Ohio Achievement Test (see Figure 1).

Because students have progressed so well on state tests, including subgroups of children, the school achieved Adequate Yearly Progress (AYP) from 2002 through 2006. All students at this school are economically disadvantaged, yet the percentage passing reading has increased—reaching an all-time high of 93% in 2004 and 2005.

### At the Beginning

When Louisa May Alcott Elementary School opened for the 1997–98 school year after being closed for 16 years, it had no curriculum, no common methodology, and teachers who did not know each other.

Educators decided to make Direct Instruction the core of their reading curriculum. Principal Maureen Berg said once teachers were trained in the program, they felt confident and proficient in teaching reading.

“Our full adoption began with the 1998–99 school year, and once stu-

dents were exposed to the program, we began to notice improvements in reading proficiency scores,” Berg said.

“The reason for high achievement on these tests is that *Reading Mastery* has improved students’ ability to read technical information,” Berg said. “We believe Direct Instruction is an outstanding methodology.”

### Direct Instruction Programs Help All Students

Now Direct Instruction's *Reading Mastery* is used school-wide in Grades K–6. *Language for Learning*, a vocabulary development program, is used in Kindergarten and Grade 1, and *Corrective Reading* is used with struggling readers in Grades 4–6.

“We think Direct Instruction is phenomenal for all kids,” Berg said. “About 23% of our children are classified as students with disabilities, and we know the program has made a tremendous difference for them.”

Berg said teachers have experienced positive success stories with Direct Instruction since the school opened. One touching story is that of a 10-year-old who had suffered brain damage in a car accident. Direct Instruction succeeded where other programs failed.

“She read to me in front of the entire class,” Berg said. “She could finally do what all the other kids had been doing for years.”

In addition, Berg said Direct Instruction works well with older children who are non-readers. “We absolutely believe in the programs. Direct Instruction is the most critical component of our balanced literacy curriculum.”

### Louisa May Alcott Elementary School, Cleveland, OH

#### About the School:

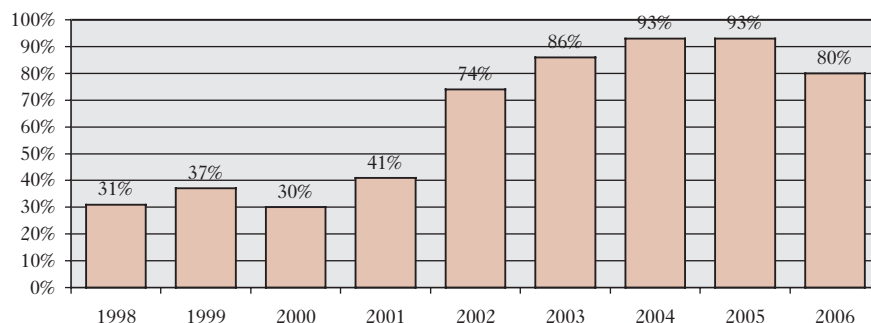
Grades:	K-6
Number of students:	208
Test(s):	Ohio Proficiency and Ohio Achievement
Reduced-price lunch:	100%

#### About the Students:

African American:	35%
Caucasian:	47%
Hispanic:	12%
Asian:	—
Other:	6%
ELL	—

Figure 1

Percentage of Grade 4 Students Passing Ohio State Reading Tests



\*In 2006, scores dropped slightly due to an influx of new students.



### Multiple Awards

Louisa May Alcott Elementary has received multiple awards for its academic success.

To receive Ohio's School of Promise Award, at least 50% of the students must meet low-income criteria, and at least 75% must pass reading or math proficiency tests. Louisa May Alcott Elementary received Ohio's School of Promise Award for academic achievement in math in 2002, and for academic achievement in reading and math in 2003 and 2004.

The school also won three national awards for the 2003-04 school year: the No Child Left Behind National Blue Ribbon School of Excellence Award, the Title I Distinguished School Award, and the Help One Student to Succeed (HOSTS) National Exemplary Award for its outstanding efforts in mentoring at-risk students.

"We absolutely attribute these recognitions to Direct Instruction," Berg explained. "I totally believe in it, as do our teachers."

### About Louisa May Alcott Elementary School

Serving approximately 208 students in Grades K–6, this school's student population is 47% Caucasian, 35% African American, 12% Hispanic, and 6% multicultural. Thirty-six percent of the student body is made up of students with disabilities, and 100% qualify for free or reduced-price lunch. For more information about Louisa May Alcott Elementary School, please visit [www.cmsdnet.net/schools/schoolbuildings/alcott.htm](http://www.cmsdnet.net/schools/schoolbuildings/alcott.htm). *ADL*

## Success Stories

### Anchorage School's Diverse Population Flourishes with Direct Instruction

In a learning environment where 20 languages are spoken and 88% of the students qualify for free or reduced-price lunch, students at Mountain View Elementary School in Anchorage, AK, are defying the language and poverty barriers to achieve increased reading proficiency with SRA/McGraw-Hill's Direct Instruction.

#### *Mountain View Elementary School, Anchorage, AK*

##### About the School:

Grades:	K-6
Number of students:	411
Test(s):	ABE/SBA
Reduced-price lunch:	88%

##### About the Students:

African American:	13%
Caucasian:	12%
Hispanic:	15%
Asian:	32%
Native Alaskan:	28%
ELL	—

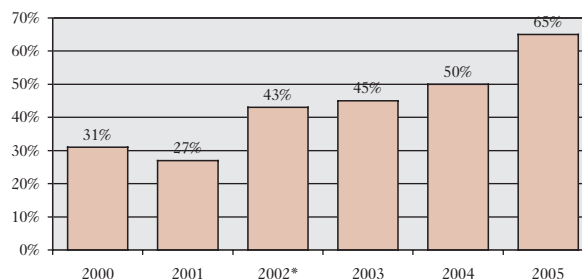
After experiencing Direct Instruction's *Reading Mastery* for one year, 43% of Grade 3 students met or exceeded state reading standards in 2002, up from 27% the year before. By 2005, that percentage increased to 65 (see Figure 1).

"That spike is definitely because of *Reading Mastery*," explained reading coach Patricia Jackson.

#### Diversity is Celebrated

Forty percent of the students at Mountain View Elementary are bilingual, and more than half of those students' parents are non-English speakers. Many families are either from the Dominican Republic and speak Spanish or are from northern Thailand and speak Hmong. Therefore, translators attend school functions to reduce the communication barrier between teachers and parents. The Mountain View staff also conducts Parent University on Friday nights to teach various skills, including literacy and math so parents can help their children with homework as well as improve their own skills.

**Figure 1**  
*Percentage of Grade 3 Students Meeting or Exceeding State Reading Standards*



Sources: Alaska Benchmark Exam (2000-2004) and Standards Based Assessment (2005)

\*2002 reflects progress after one year of Direct Instruction.

## Direct Instruction + Mountain View Students = Reading Proficiency

To increase reading proficiency school-wide, teachers implemented several Direct Instruction programs at the start of the 2001-02 school year. *Language for Learning* began in Kindergarten and *Reading Mastery* continued in Grades 1-6. *Corrective Reading* was used with struggling readers in Grades 4-6 who tested two or more years below grade level.

“When we first started, we placed 49% of our students from Grades 4-6 in *Corrective Reading*,” Jackson said. “It worked so well for our children that by the 2003-04 school year, only 20% of our intermediate students needed *Corrective Reading* intervention.”

Jackson also said it’s not unusual to watch students make tremendous strides after they begin *Corrective Reading*. One student jumped ahead four grades in reading in just two years! “Now students have a serious attitude

toward reading and are motivated to improve their skills,” she said.

Students who work with the school’s English as a Second Language (ESL) teacher also progress at a steady pace with *Reading Mastery Rainbow Edition*. “Our ESL teacher said she had never seen such incredible growth in reading and language acquisition as when we implemented *Reading Mastery Rainbow*,” Jackson added.

Mountain View Elementary School students continue to experience Direct Instruction programs every day: *Language for Learning* and *Reading Mastery* in Kindergarten, *Reading Mastery* in Grades 1-3, *Reading Mastery Plus* in Grades 3-6, and *Corrective Reading* when necessary in Grades 4-6.

### Staff Development Is Key

Jackson said one of the reasons students have had such great success with the Direct Instruction programs is because the top-notch teaching staff puts a great deal of time and energy

into their teaching. In addition, the staff, who received a significant amount of training and coaching at the beginning of the implementation, continues to get support and professional development opportunities.

“Staff development is absolutely key to a successful implementation,” she said. “We continue to offer training during in-service days and also train in-house coaches to keep the program running smoothly.”


### About Mountain View Elementary School

Serving approximately 411 children in Grades K-6, this school has a diverse student population: 32% Asian, 28% Native Alaskan, 15% Hispanic, 13% African American, and 12% Caucasian. Eighty-eight percent of the children qualify for free or reduced-price lunch. For more information about Mountain View Elementary School, visit [www.edline.net/pages/Mt\\_View\\_Elementary](http://www.edline.net/pages/Mt_View_Elementary). *ADI*

BOB DIXON



BOB DIXON



## *What Would You Get if You Set Out to Write the Worst Textbook You Could Possibly Imagine? A Best Seller*

This will be my last “View from Askance” contribution to the *DI News*. I can hear the sighs of relief from here (in Olympia, WA). I thought my last contribution was my last contribution, but I think I forgot to mention that to the editors. I’ve run out of things to write about—almost. (I know some people who think I ran out of things to write about quite some time ago.)

I was thinking recently about this somewhat strange question: What if

Zig Engelmann set out intentionally to write the worst textbook he possibly could? What would it look like? What would a unit and a chapter and a chapter section look like? If you think about it, Zig should be able to pull this off better than anyone alive. You all know some of the things he would do if he were to engage in such an exercise. Extremely confusing concepts all would be introduced at the same time and/or in close approximation. Stuff

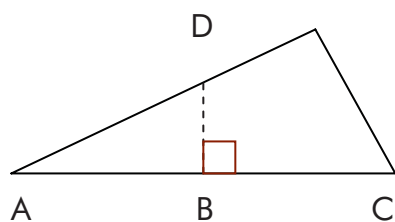
would be “taught” and then dropped, or more accurately, “covered” and then dropped. New material being covered would logically require mastery of prerequisite knowledge that most of the students most likely wouldn’t have. Things like these, and a lot more. (Please don’t email me about a “sentence fragment.”)

I’ve given away the punch line in the title. If Zig were to engage in this little heuristic exercise, the result, I believe, would be a textbook that would sell like crazy and generate a fortune in royalties, *and* it would take about one-twentieth of the time that it would take to write an instructionally sound textbook. As with much of the inspiration for this column (such as it is), this one came to me while looking at my daughter’s geometry textbook. The

thought hit me that if Zig had tried to write the worst possible geometry textbook in the world, it would end up looking a lot like Emily's geometry text, published by one of the few major educational publishing companies still standing.

I'll illustrate this contention with just a couple of examples, which should be more than enough. Let's start with something really simple: the idea of a line that is a perpendicular bisector of one side of a triangle (Figure 1).

**Figure 1**

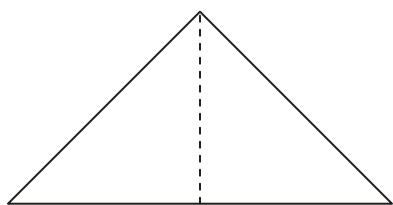


The side of the triangle we're looking at is the bottom, which is line AC. The *perpendicular bisector* is the dashed line. Because the dashed line bisects AC, both AB and BC are half the length of AC. Without knowing algebra or geometry or anything else other than what I've just said, if I tell you that BC is 5 inches long, then you know what the length of AC is.

There are a couple of ways we can make this seem far more complicated to students, should we choose to. First, we could start with an example that is *atypical* instead of *typical* (Figure 2).

*By coincidence*, the perpendicular bisector in Figure 2 also happens to bisect

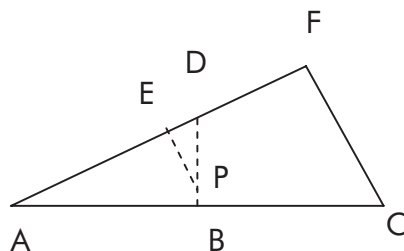
**Figure 2**



the opposite corner (or vertex). This just happens for one side of an isosceles triangle and all three sides of an equilateral triangle. It doesn't happen with any other triangle. And as we'll see in a minute, there is such a thing as an *angle bisector*, which is a completely different thing.

Now, there is a good reason (geometrically speaking) to teach the concept of a perpendicular bisector (like the dashed line in Figure 1). To see that reason, we have to look at the perpendicular bisector of *two* sides, not just one (Figure 3).

**Figure 3**

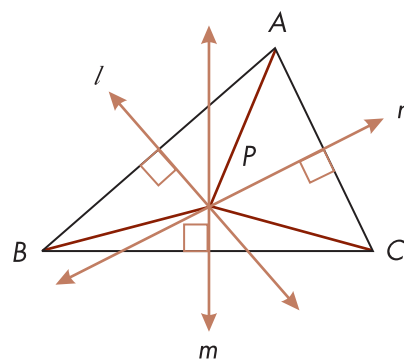


Now we have another perpendicular bisector for side AF. Where the two perpendicular bisectors come together (or *intersect*, at point P) is called a *circumcenter*. That point is exactly the same distance from each vertex (points A, C, and F) of this particular triangle. That's the basic deal with perpendicular bisectors.

I'd just like to point out that all you need to find the circumcenter is *two* perpendicular bisectors, not three. But if you show three perpendicular bisectors, *and* if you draw lines from the circumcenter to each corner or vertex, then ... you can create a confusing mess that is almost certain to confuse most students (Figure 4).

Does this look confusing? The lines *l*, *m*, and *n* are perpendicular bisectors. They are there to show where point P comes from. Remember, point P is the *circumcenter* of the triangle, and we only need two perpendicular bisectors to find that point. Showing all three (at

**Figure 4**



the beginning of instruction) is unnecessary and just clutters everything up. And after we've found point P, we don't actually need lines *l*, *m*, and *n* anymore. If I didn't want students to be confused, I'd have them erase those lines once point P had been found. What you'd then draw would be lines PA, PB, and PC. They are all the same length (which is the only reason for dealing with circumcenters), and that would be pretty obvious if the unnecessary lines weren't there.

But remember, we're trying to create the worst possible geometry text, so we'll have students do the following right after the "explanation" in the book (Figure 5).

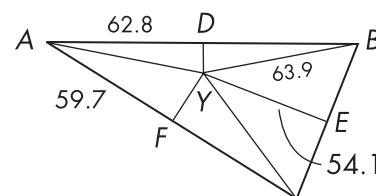
This combines two different concepts, that of perpendicular bisectors and that of circumcenters. This is a good strategy for writing a terrible program. It would be *way too easy* to just practice

**Figure 5**

### *Practice and problem solving*

$\overline{DY}$ ,  $\overline{EY}$ , and  $\overline{FY}$  are the perpendicular bisectors of  $\triangle ABC$ . Find each length.

- |          |          |
|----------|----------|
| 12. $CF$ | 13. $YC$ |
| 14. $DB$ | 15. $AY$ |





one or the other concept for a while, as shown in Figure 6.

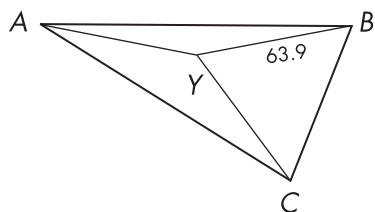
If the distance from the circumcenter to each corner is the same, then the answers to just the circumcenter questions are easy. This, however, is geometry, and we're not trying to make it easy, so ... never mind. (The directions should say, "Y is the circumcenter of triangle ABC," but I had enough trouble creating Figure 6 as it was.)

**Figure 6**

*Practice and problem solving*

$\overline{DY}$ ,  $\overline{EY}$ , and  $\overline{FY}$  are the perpendicular bisectors of  $\triangle ABC$ . Find each length.

13.  $YC$
15.  $AY$

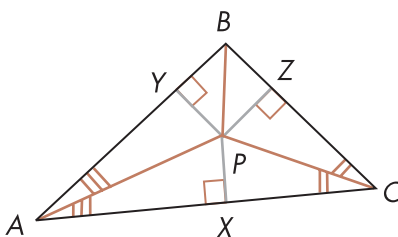


The way to make this all close to impossible to understand, of course, is to take concepts very similar to *perpendicular bisector* and *circumcenter* and introduce them all within four days or so. Then we would have:

1. Perpendicular bisectors. They intersect one another at a point called the circumcenter. The circumcenter might be inside the triangle, outside, or right on one of the sides. The distance from the circumcenter to each vertex of the triangle is the same. (This is really two things: perpendicular bisectors, which tell us things about the sides of triangles, and circumcenters, which tell us about the distance from some point to each vertex in a triangle, but nothing about the sides.)
2. Angle bisectors. These bisect the three angles of a triangle; where any two of them intersect is called the *incenter*. Unlike the circumcenter, the incenter of a triangle always falls

within the triangle. The useful thing about an incenter is that once you've found it—or someone has told you where it is—then the distance from that point to each side of the triangle is the same (see Figure 7).

**Figure 7**



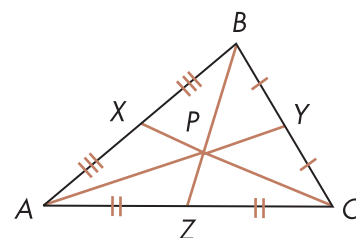
Again, two very different concepts have been combined here to ensure maximum confusion (in addition to the confusion created by teaching circumcenter and incenter in the same lesson). Lines AP, CP, and BP are all angle bisectors. That's potentially good to know, because then if you know how many degrees one angle is, you can easily see how many degrees half of that angle would be. A very simple concept—by itself.

In you're teaching incenters, though, then after finding the incenter we could erase the angle bisector lines and just be left with lines XP, YP, and ZP. Those lines are perpendicular to the sides *only* because the shortest distance from the incenter (P) to each side is along a line perpendicular to a side. Other than that, incenters don't have much to do with lines being "perpendicular." Incenters are useful only because if you know the distance of one of the lines XP, YP, or ZP, then you know the distance of the other two.

In my daughter's book, after the single lesson on circumcenters and incenters, there is another lesson on centroids of triangles and orthocenters. Just to give you an idea of what those concepts involve (relative to circumcenters and incenters), check out Figure 8.

Here, each line (such as AY) runs from one vertex of the triangle to the *middle*

**Figure 8**



of the opposite side; these lines are called medians. Therefore, points X, Y, and Z bisect a side, just like a perpendicular bisector, except that the lines aren't perpendicular to the sides. Here, point P is called a *centroid*. It *looks like* the lines (such as AY) bisect the angles, but they don't. (Under some circumstances, though, they could. Remember Figure 2? That line happens to be a perpendicular bisector, an angle bisector, and a median. Points along the line can be part of a circumcenter, an incenter, or a centroid.)

The centroid itself (point P) is potentially useful because the distance from the centroid to a point is twice the distance from the centroid to the side opposite that point. This can be stated in enough different ways to ensure failure. For example, we could say that the length of ZP above is half the distance of BP, or we could say that ZP is 1/3 the distance of BZ, or that BP is 2/3 the distance of BZ.

This same lesson in my daughter's book goes on to introduce the *two* concepts of altitude and orthocenter. This time, I'll keep the commentary short because I think I've made my point.

In Figure 9, the triangle we're looking at is QRS. Point P is now the orthocenter. The orthocenter could also be on that line back in Figure 2 that cuts the isosceles triangle in half.

I contend that none of these concepts is a difficult concept to learn. Not one. Learning the terminology for each concept and keeping that straight is, analytically speaking, the most difficult thing going on here, not learning the

It's same ole, same ole. A few kids get A's on the tests, which passes as proof

Isn't that strange? Really. You'd think that any best-selling textbook would get a few things right, would do a few things that actually take a student perspective into consideration. You'd think that Zig's horrible geometry text would be far worse than a best-selling geometry text. This is both astounding and depressing. Someone is making a fortune off a textbook that could be just *slightly* better than the worst textbook we could imagine, the worst textbook Zig could write. Get out the

I was about to say I feel better now, having vented. That doing so was cathartic for me. Actually, I feel worse. I'm sending this off to the editors, and then I'm going to try to forget about the fact that content experts are out there writing materials of instruction that are almost as bad as they would have been had Zig intentionally tried to make them as bad as he possibly could. *ADD*

Spring 2008

MARY DAMER, The Ohio State University and Multi-Tier LLC, BILL BURSUCK, University of North Carolina at Greensboro, ROBERT HARRIS, JP Associates, and MEGAN MIMMS, University of North Carolina at Greensboro

## *A Year Later: Performance of Students Who Exit Tier 3 Direct Instruction Within a Multi-tier Reading Model*

Two hallmarks of a multi-tier model of reading instruction are prevention and catch-up. Given that research indicates that most students who are behind will never catch up, educators need to identify these children as early as possible and provide them with the level of support that is needed to prevent reading problems in the first place. Equally important is determining how to bring these struggling readers to grade level as quickly as possible. Too few students, once placed in intensive instruction, make enough progress to exit, or, if they do exit, maintain their gains over time.

For the past two and a half years we have been implementing a multi-tier reading project in a large urban district in the Southeast. The district includes 35 elementary schools in which most of the students qualify for free and reduced-price lunch assistance. In our three-tiered model, students are placed into tiers based on their performance on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Tier 1 is the core reading program, Houghton Mifflin, taught using enhancements designed to increase its effectiveness with the high percentage of students in the district who are at risk for academic failure. Most of these enhance-

ments were derived from Direct Instruction programs and are described in more depth in Bursuck & Damer (2007). Tier 1 teachers are provided with daily lesson outlines and specific teaching formats (based on DI) to ensure that the big ideas are presented effectively and efficiently to students.

Tier 2 students receive 10–30 min of additional practice of essential skills covered in Tier 1 Houghton Mifflin, plus fluency-building activities. Students who receive these “booster” sessions are at “some risk,” their DIBELS scores indicating that they are not acquiring essential skills covered in Houghton Mifflin and require additional tutoring. Tier 2 is usually taught by general education teachers or support staff.

The most intensive tier consists of students who, despite Tier 1 and Tier

2 instruction, still fail to acquire reading skills at an adequate rate based on receiving “at risk” DIBELS scores. These students, who are in Tier 3, receive approximately 50 min of instruction in DI, either *Reading Mastery* or *Corrective Reading*. The 50-min time restriction was determined by the state Reading First guidelines so that Tier 3 students could participate in the core program for most of the reading block. When not receiving the Direct Instruction reading support, students in Tier 3 participate in small group activities and independent learning centers and receive vocabulary and adapted comprehension instruction in Houghton Mifflin. Special education teachers, Title 1 teachers, and paraprofessionals usually teach Tier 3. For a more complete description of the multi-tier model, see Bursuck & Damer (2007).

In this article we examine outcomes related to student catch-up for students in Tier 3 receiving DI in six of the schools designated as Reading First schools. Coaching records in those schools for the 2005-06 school year yielded the necessary information for comparison. Eighty-four percent of the students in these six schools qualify for free and reduced-price lunch assistance. Our investigation includes the number and percentage of students exiting DI and moving into Tiers 1 and 2, and the performance of exiting DI students once they return to Tiers 1 and 2. Data related to prevention or the effectiveness of the Tier 1 program are still being collected and analyzed and are not reported here. In order to exit Tier 3 Direct Instruction, a student needed to score at grade-level benchmark on the DIBELS with teacher and coach agreement that the student had a high probability of success in the core curriculum. First, we explore whether students exiting from DI maintained their reading performance at benchmark levels after moving into Tiers 1 and 2 by analyzing their performance on the DIBELS Oral Reading Fluency

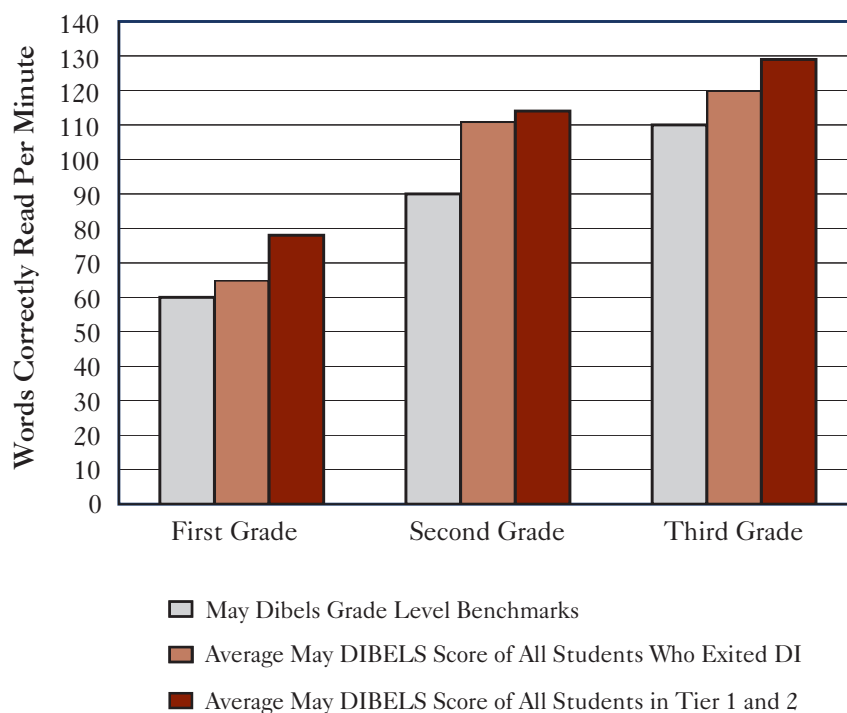
(DORF) assessment one year later, in May 2007. Next, we examine maintenance of tier placements by reporting tier placements for exiting Tier 3 students in May 2007. Finally, we report overall catch-up rates at the six schools by presenting the overall number of students exiting DI.

Figure 1 shows the May 2007 DORF performance of students who exited DI during the first year of the project and attended school from September 2006 through May 2007. These students originally tested at the *at-risk* or

*deficit* levels on the DIBELS at the beginning of the 2005-06 year and were placed into Tier 3, which is *Reading Mastery* or *Corrective Reading*. The students made rapid progress as demonstrated by benchmark performance on the DIBELS measures, and they exited Tier 3 DI in either January 2006 or May 2006. (Number of students in Figures 1 and 2 who exited DI: 1st grade = 69, 2nd grade = 30, 3rd grade = 23). After exiting DI, these students automatically moved into Tier 2 to receive small-group booster support, which is intended to

**Figure 1**  
*May 2007 DIBELS Oral Reading Fluency Performance for Students who Exited DI in January and May 2006*

	First Grade	Second Grade	Third Grade
May Dibels Grade Level Benchmarks	60	90	110
Average May DIBELS Score of All Students Who Exited DI	65	111	120
Average May DIBELS Score of All Students in Tier 1 and 2	78	114	129



increase the students' odds for skill maintenance. Their scores are compared with the scores for Tier 1 and 2 students who attended school the entire 2006-07 year. (Number of students in Tiers 1 and 2: 1st grade = 287, 2nd grade = 269, 3rd grade = 286). Note that in all three grades, the students' DIBELS oral reading fluency scores are higher than the DIBELS benchmarks and somewhat lower than their classmates in Tiers 1 and 2.

The finding that our Tier 3 students exiting DI are maintaining their reading gains is confirmed further in Figure 2, which shows the average words-per-minute gains on the DORF from May 2006 through May 2007 for students who exited DI in 2006 and attended school for the 2006-07 school year. These gains are compared to the gains of their Tier 1 and 2 peers, as well as normative gains based on research conducted by Fuchs, Fuchs, Hamlett, Walz, & Germann (1993). Note that the Grade 1 gains are based on 16 weeks because DORF is not given until the middle of Grade 1.

The levels of the students who were initially in Tier 3 DI and their Tier 1 and 2 peers are roughly comparable, although first- and second-graders in both of these groups performed somewhat lower than the norm in words-per-minute gained. Note that only reading fluency data are reported here because comprehension performance for individual students was not available. While this is a limitation, there is considerable evidence to show that oral reading fluency and reading comprehension are highly correlated (Fuchs, Fuchs, Hosp, & Jenkins, 2001).

Figures 3 and 4 depict the May 2007 tier placements for students who exited Tier 3 Direct Instruction in January and May 2006 (January exits: 1st grade = 50, 2nd grade = 14, 3rd grade = 19; May exits: 1st grade = 19, 2nd grade = 16, 3rd grade = 4). Note that more than 60% of both the January and May exiting students remained in Tier

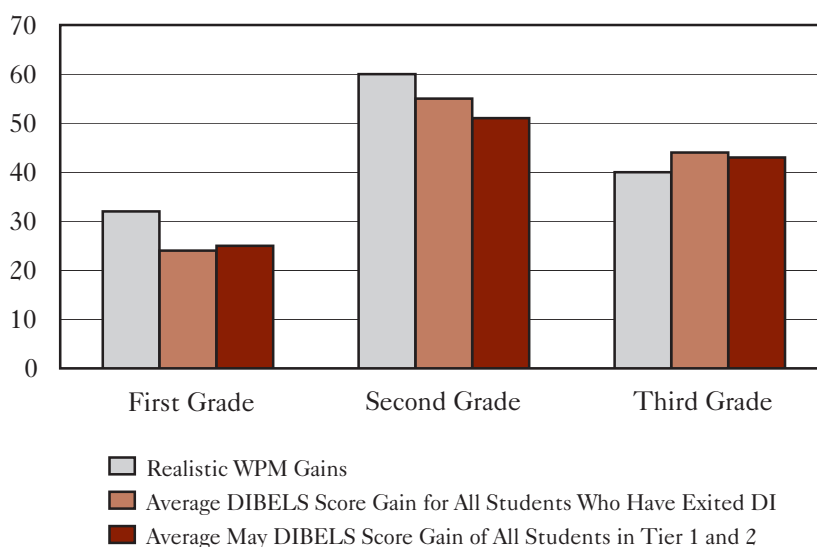
1, testing at benchmark levels one year later. Another 24% of both groups received adequate support via the small-group booster instruction in Tier 2 and remained in the Houghton Mifflin curriculum. Fewer than 15% of the students in both groups fell back into Tier 3, and with two exceptions these students exited DI in kindergarten. Unfortunately, we have thus far detected no discernible pattern accounting for the higher levels of recidivism among students who exited in kindergarten, though we have found that the 20% of students who do return to Tier 3 typically re-accelerate their progress once they have more support.

The percentage of students who exited from DI during or at the end of May 2007 for grades K-3 is shown in

Figure 5. (Number of students who exited: kindergarten = 208, 1st grade = 199, 2nd grade = 188, 3rd grade = 179). Because of the high turnover in the six Reading First schools, to determine the percentage of children who exited we only examined the records of students who were in Tier 3 Direct Instruction from September 2006 to May 2007. Also shown is the percentage of exiting students from the one school among the six that had a particularly high level of fidelity to the model, as determined by district personnel, the Direct Instruction consulting company, and our in-school observations. (Number of students who exited: kindergarten = 54, 1st grade = 28, 2nd grade = 37, 3rd grade = 37). Two relevant aspects of higher fidelity are higher levels of expertise

**Figure 2**  
*Words Per Minute Oral Reading Fluency Gains for Students Who Exited DI in January and May 2006*

	First Grade	Second Grade	Third Grade
Realistic WPM Gains	32	60	40
Average DIBELS Score Gain for All Students Who Have Exited DI	24	55	44
Average May DIBELS Score Gain of All Students in Tier 1 and 2	25	51	43

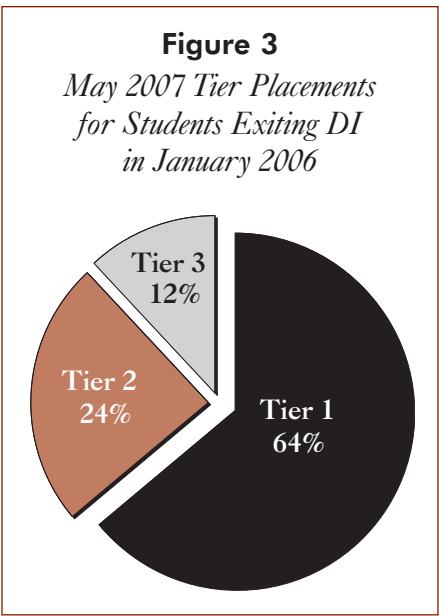




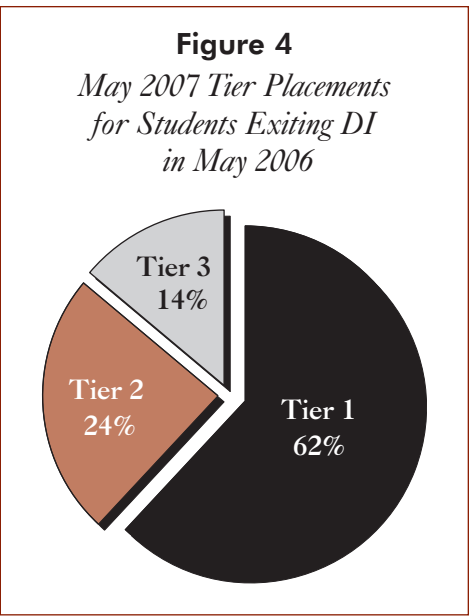
observed in teachers delivering Direct Instruction and in literacy coach support to teachers.

Note that the percentages of students exiting Direct Instruction for the six schools are generally low for significant “catch up,” whereas those for the school with higher fidelity indicate more acceptable levels. These contrasting results indicate that plans for increasing fidelity need to be developed through increased in-class coaching, more in-service sessions devoted to training and role playing, and more leadership support for Direct Instruction at both the district and principal levels (Silbert, 2001). When the administrator who brought Direct Instruction into this district left after the first year of implementation, central office support was significantly reduced. However, while fidelity of implementation is a factor, it is not the only one. Another major reason for the low numbers of students exiting the Direct Instruction reading programs is that not enough instructional time was allocated for small-group Tier 3 support. The average Tier 3 group takes place daily for 45–50 min, a time commitment significantly below that needed to get struggling readers to grade level. In contrast, Silbert (2001) recommends that struggling readers receive 90 min per day in the Direct Instruction reading program in addition to the 90-min period in the school’s core program. At this time, most multi-tier reading models do not provide anywhere near this level of support for students at Tier 3, and it is our conclusion that this level of support may be essential if we are to catch more students up to grade-level reading performance.

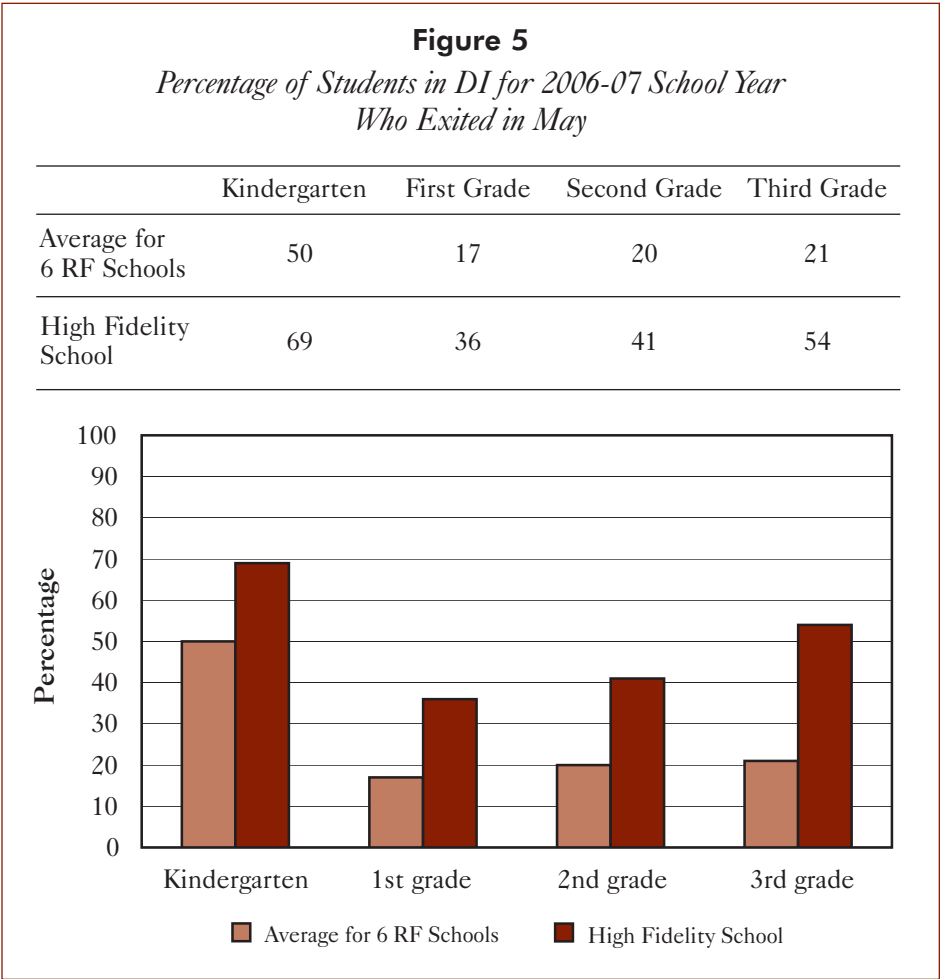
A third variable that appears to determine how rapidly students in Tier 3 progress is the amount and quality of instruction outside of small-group Direct Instruction. Differentiated instruction is a practice that is relatively new to many general education teachers, and our observation indicates



that teachers need additional training and coaching to develop these skills. For example, teachers who give students in Tier 3 additional sight words to memorize or frustration-level text to read can unravel the benefits of the



carefully designed Direct Instruction curriculum. Students may begin using guessing strategies, which can interfere with their development of rapid decoding. We have observed that if teachers use the words students are



reading in DI as their weekly spelling words, design independent word centers to provide more practice reading those words, and select independent and instructional-level text for additional reading, their students will benefit. Tier 3 students also can benefit from core program vocabulary lessons if these lessons are presented orally, and from comprehension activities if teachers stress listening rather than reading the frustration-level text.

While the overall exit rates are low, one encouraging result is that the number of students exiting Direct Instruction is on the rise as teachers

become more skilled. Figure 6 represents the exit rates for the 2005-06 and 2006-07 school years for the 6 Reading First schools, showing that more students are exiting DI, with 183 exiting in 2005-06 and 279 in 2006-07.

## Conclusion

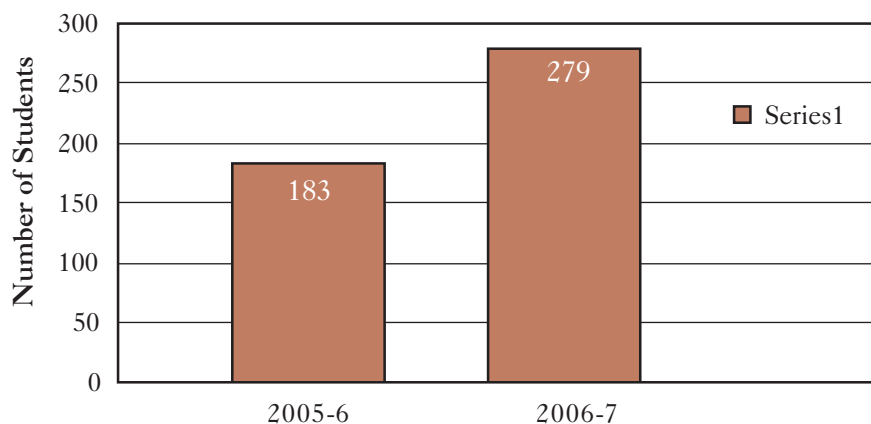
In a multi-tier model, the purpose of Tier 3 instruction is to eliminate the achievement gap between students who struggle the most in reading and their classmates. The good news here is that students who are catching up are acquiring grade-level skills and

beyond, and, better yet, are by and large maintaining these skills. However, the fact that relatively few students overall are exiting from DI is a concern. We know that as teachers become more comfortable and proficient at teaching DI, student performance will improve. The number of students in Tier 3 also can be reduced substantially by a continuing, strong district commitment to training teachers to implement all components of the multi-tier model effectively and by substantially increasing the amount of time allotted to Tier 3 support. **ADI**

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**Figure 6**  
*Students Exiting Tier 3 DI instruction*





DON CRAWFORD, Baltimore Curriculum Project

## *Responsible Use of DI and other Power Tools*

Direct Instruction curricula are a set of tools that can help teachers instruct more effectively. Arguably they are analogous to power tools, such as skill saws, power drills, power sanders, and the like, for the home handyman. Used properly, both power tools and DI programs can multiply the efforts of the user so that a great deal more can be accomplished. However, neither power tools nor curricular tools

can, of themselves, prevent misuse. Neither is foolproof. When not used properly, neither will accomplish much. What follows are several points about how to use both power tools and Direct Instruction responsibly, and the likely consequences when they are not used properly.

**1. Read the power tool's manual first.** It is very dangerous to use power

tools for the first time without reading the manual. Experienced users have less need, but they still need to know where the emergency off switch is and where to find out how to change the blade or the bit. In Direct Instruction, the manual is the teacher's guide. Solutions to most of the problems teachers will encounter are outlined in there, including what teachers need to do when they encounter common confusions and how to avoid deepening a confusion that the students are encountering. Other professionals know how important it is for them to

read up on what they are doing—so that should include teachers.

Consequences of not reading the manual are:

- The user falls into all of the most common pitfalls.
- Easily preventable bad things happen.
- Projects get ruined or students get confused unnecessarily when the user fails to read the manual.

Teachers of Direct Instruction who teach a program without reading the teacher's guide are unnecessarily handicapping themselves. They don't know how to correct common errors, they don't know where the instruction is headed, and they don't know the purpose of the various strands of instruction. They lose out on all this information because they don't read the programs manual—the teacher's guide.

**2. Prepare before starting to use the power tool.** Individuals using a power tool must have a plan before they turn on the switch. Preparation is involved in measuring, marking, securing the material so it doesn't fly about after starting, etc. There is an old saying in carpentry: "Measure twice, cut once." That would be doubly true when using a skill saw.

In Direct Instruction, preparation involves reading the lessons in the presentation book. Here are five guidelines to know when a teacher has read through the lesson enough times to responsibly begin presenting it.

- a. Read until the objectives of the lesson are clear. A teacher will certainly need the student book, workbook, and presentation book to get a complete picture of what the student is seeing, as well as what the teacher will be saying. The teacher will often have to read the lesson aloud before it becomes clear what the script is trying to say, and how he/she should emphasize certain words.

- b. Read until it is apparent what kind of signals should be used. Will the children be looking at the teacher, so a hand drop signal can be used? Or will they be looking at their book, so the teacher will need an audible signal? Or will students be looking up at the teacher presentation book or blackboard so that the teacher will have to use a lift-and-touch signal?
- c. Read to anticipate errors and decide how to correct the errors. The teacher may have to go back a couple of lessons to see the specified correction for that type of error and may then have to jot it down on a sticky note so that it is handy to use. These corrections are put into the program by the authors based on typical problems found during field-testing. However, the teachers should know their students even better in order to anticipate specific errors and to be ready with the appropriate error correction. Sometimes the teacher may also need to consult the teacher's guide (manual) to find out how to fix a specific kind of error.
- d. Prepare additional examples if the group will need more than those presented in the script. Good examples can be found in previous or upcoming lessons. Teachers should *not* attempt to make up examples during the lesson—they won't be sure of choosing good ones. When anyone tries to choose examples "on the fly" it is quite likely that some of the examples won't "work" to follow the rule—and then students and the teacher become confused.
- e. Teachers need to practice reading the lesson aloud until they can present it fluently and smoothly without having to read every part word for word—so they can look up and see what their students are doing.

Lack of preparation for using a power tool often results in injuries or mistakes that are difficult to undo. Usually one ends up having to replace some materials and start over. In Direct Instruction, lack of preparation frequently results in lack of mastery,

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because the teacher does not present the material in an understandable way, doesn't have good signals, and cannot correct errors. Students come to tests and do poorly, lose time in remediation, and fail to progress as they should. The worst outcome is that students are put back many lessons and have to repeat them. This is sad because they necessarily fall below grade-level expectations due to something clearly preventable.

### **3. Watch what you are doing carefully while using the power tool. A**

person using power tools must watch very carefully to see that what is being accomplished is enough and not too much. Both mistakes are easy to make with a power tool. It is easy to overdo it with a power tool and saw too deeply or sand off too much or sink the screw in too far. However, it is also necessary to watch each time to ensure that one has sawed all the way through, sanded enough, or gotten the screw all the way in, because it is easy to make the "not enough" mistake when rushing through a job. Imagine a person putting in deck screws with a

power drill who just pushed and didn't look to see if the screws went all the way in, flush with the board. It would not be a pretty sight.

In Direct Instruction programs, the goal is mastery. One has to do enough repetitions to achieve mastery without doing so many repetitions that children are wasting a lot of time repeating things they have already learned. (By and large, children are not bored while they are still working to learn something—they only get bored if the teacher continues to "firm up" material they have long ago mastered.) The teacher must constantly assess whether or not students have learned the material. A teacher who, when asked, does not know whether or not all the students have learned the objective will be unable to effectively teach because he or she does not have the data necessary to drive instructional decision-making. The tool of the DI curriculum relies for its effectiveness on a teacher who is carefully "watching" and constantly evaluating whether or not the students are mastering the material.

The consequence of "not watching carefully" is that the person will do too much or too little. In our example of deck screws, either the deck screws will be buried too deep in the boards, leaving unsightly holes, or the deck screws will be sticking up, tripping people. Someone will have to go along behind the carpenter and correct and/or finish the job. In DI, pretty much the same thing happens. If the teacher overdoes it, the students will constantly be repeating things they have mastered, leading to boredom and off-task behavior—generally an unsightly mess. If the teacher doesn't do enough, the students will not get enough repetition, will not master the material or pass tests, and someone will have to do those lessons over again with the children.

### **4. Recognize that a power tool simply aids in accomplishing a task.**

## *DI-ANNOUNCE Electronic List*

An electronic list is now available: DI-ANNOUNCE. As its name indicates, DI-ANNOUNCE is an electronic list for announcements on resources for those studying or implementing Direct Instruction. List topics include the following:

- research articles, news articles, and other publications on DI;
- updates on DI implementations;
- meetings, conferences, and workshops on DI;
- authors' remedies for specific exercises in the DI programs that have been identified as being difficult for children;
- new DI products and resources;
- grant opportunities or awards for DI research or implementation;
- job opportunities for DI researchers or practitioners;
- sources of data on student performance for analysis or distribution.

Note that DI-ANNOUNCE postings are limited to ANNOUNCEMENTS. The list is NOT a discussion list, and it is moderated. Any replies, jokes, or other off-task messages will be rejected. There is an on-line, web-based archive of postings for later reference and retrieval. In this way, the list is designed to be a streamlined tool for communicating information on the most critical developments in the field of Direct Instruction.

To subscribe, send a message to [join-DI-ANNOUNCE@lyris.nifdi.org](mailto:join-DI-ANNOUNCE@lyris.nifdi.org).

You will then receive a "welcome" message with additional information about the list. You can also go to <http://lyris.nifdi.org/> to see an archive of past announcements sent to the list, including the "welcome" message.

The list launched last October. You are invited to join the list and send announcements as appropriate. Feel free to call Kurt Engelmann at the National Institute for Direct Instruction (NIFDI) via 877.485.1973 toll-free or email [kurt@nifdi.org](mailto:kurt@nifdi.org) if you have any questions about the list.



Someone who doesn't know how to do the whole task cannot succeed, even with a power tool. Some folks say that people should learn to do tasks without the power tool first, so as to better know what they are doing. There is some truth to that suggestion. Certainly without understanding the task at hand, there are many ways to misuse power tools—or use them ineffectively so as not to accomplish anything. Cutting based on the wrong measurements, putting screws in the wrong place, leveling the wrong boards—none of these problems are the fault of the tool, but the fault of the user who doesn't know what he or she is doing.

Direct Instruction programs are designed to teach specific skills and objectives. The teacher must understand those skills and objectives and must know what a good outcome looks like, what successful students should be able to do. The teacher must understand (or come to understand) why the script is saying what it is and

why students must give those answers. The teacher has to understand the difference between answers that must be given verbatim and those (marked by the word *Idea* in italics) where the student can choose their own words to communicate the idea. The teacher has to understand how to give help or scaffolding to students to help them learn something—and then understand why it is critical to take that scaffolding away very systematically before assuming mastery. The teacher must know that the purpose of individual turns is to assess mastery. He or she must watch carefully for that information. In other words, to be successful, the teacher has to know what he or she is doing in instruction—not simply reading the script and repeating a lot of the items.

The consequence of not recognizing that the power tool is simply an aid is that everyone confuses using the tool with accomplishing the task. Just because the supervisor can hear the

skill saw buzzing doesn't mean the boards are being cut to the right length. Just because teachers are reading the Direct Instruction scripts going over some of the answers again and again doesn't mean the task of teaching the students is being accomplished. There are dozens of ways to read DI scripts (use the tool) without accomplishing the task of having students learn. For Direct Instruction to be effective, the teacher must know something about accomplishing the task, independent of using the tool.

**5. Clarify the objectives desired before using the power tool.** Before the handyman uses a power tool it is important to know what he or she is trying to accomplish. The tool has to match the job the person is trying to do. If a person is trying to put nails into boards on an outdoor deck, a power drill is not going to be helpful. If the objective is simply to fasten the boards, and the would-be carpenter has obtained deck screws, then the

Now available from ADI

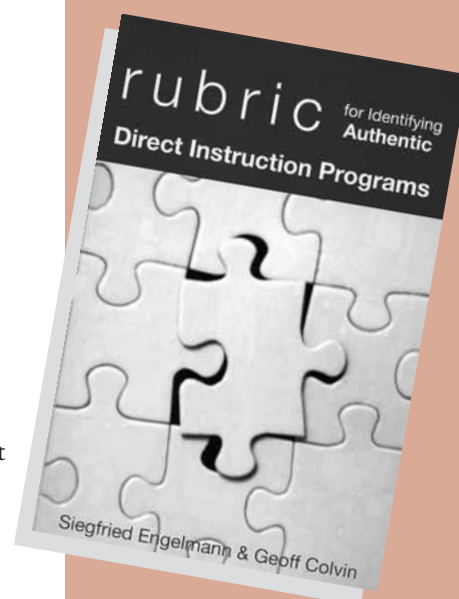
## *Rubric for Identifying Authentic Direct Instruction Programs*

*Siegfried Engelmann & Geoff Colvin*

The purpose of this document is to articulate and illustrate most of the major principles or axioms that are followed in the development of Direct Instruction programs. This information is useful for the following reasons:

1. It permits a critic to look at material and judge whether it is true Direct Instruction or some form of imitation that does not adhere to the full set of axioms that characterize true DI.
2. It shows the level of detail associated with what students are told, how they are tested, what kind of practice is provided, and how the material is reviewed and expanded from one lesson to the next.

*Direct Instruction programs have an impressive track record for producing significant gains in student achievement for all children. This book provides the reader with an understanding of the critical details involved in developing these effective and efficient programs.* — Doug Carine, Ph.D., Professor, University of Oregon



**Cost:**

**\$15.00 list**

**\$12.00 member price**

**To order, see page 38.**

power drill would be perfect. A person trying to smooth the edges of a delicate dollhouse will be advised not to fire up a belt sander to do the job. Instead he or she should do the job by hand, or get a hold of a smaller sander designed for delicate work.

Different DI programs teach specific objectives and clearly do not teach other objectives. Many times teachers or schools or districts use DI programs that are designed to do something other than their objective. Often teachers use the DI program they have rather than the one that is needed. For example, say a group of students are fair decoders but are very weak in vocabulary. Putting those students through *Corrective Decoding* will keep

them busy and may improve their decoding, but it won't improve their vocabulary—unless the teacher goes outside of the script to teach all the vocabulary that students do not know in the program. For another example, if children need to learn to write for specific genres such as persuasive or compare/contrast, placing them into *Expressive Writing* will give them fundamental writing skills but will not teach the genres—the program wasn't intended for that purpose.

To best determine the objectives that a DI program teaches, one should look at the manual—the teacher's guide. In the teacher's guide there are examples of what students will be able to do when they master each strand of the

program. It is important to be sure that these skills match your objectives, that this is indeed what you need students to do—because that is exactly what they will learn. They will not magically learn something else, even though you *really, really* wish they would.

The consequences of not clarifying objectives are dire. The main problem is that the whole enterprise can be a waste of time. What needs to be achieved is not. When the objectives of a DI curriculum do not match what children need, the children are busy and may be learning, but not what they need to learn.

**6. Understand that there are important tasks the power tool does not do.** In any do-it-yourself project there are a number of tasks for which there is no power tool, or the power tool doesn't quite do the job but the job must still be done. For example, one must do finishing sanding, whether or not one has a finish sander. Even the fully loaded handyman still has some tasks that have to be done by hand—including the final bit of finish sanding. The important point is that the available power tools do not define all the tasks that have to be done; some additional tasks still have to be done without the power tools.

Direct Instruction programs are powerful tools for teaching a lot of important material, but there are still things that are important to teach children that are not in those books. For example, children need to learn how to correctly and fluently print manuscript and write numbers. The practice in *Reading Mastery I* is not designed to teach children how to correctly print manuscript and print it fluently. Just because there is no DI program for that purpose doesn't mean the job doesn't need to be done. There is a DI program for cursive writing. If schools don't use that program, or even if they do, the job still needs to be done until students can correctly and fluently write. Students need to become fluent in math facts. If they



## National Institute for Direct Instruction

NIFDI is a non-profit organization dedicated to providing superior support and training for DI implementations.

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Direct Instruction support materials previously only available to NIFDI clients are now available for purchase by the general public! Including:

- ◆ Star School Series
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don't become fluent in math facts as a by-product of the *Connecting Math Concepts* program, then additional work in math facts is necessary. If children have limited vocabularies and do not know the meaning of lots of words in the materials, teachers must teach that vocabulary, even if it is not in the script. If the script is not designed to

teach those words as vocabulary words, they will not be learned.

The consequences of not understanding that there are jobs that need to be done by hand is obvious. Those jobs don't get done and the outcome is less than satisfactory. Just because a skill is not taught by a DI program does not

mean that the skill can simply be ignored. Many times these unaddressed skill deficits hold the whole enterprise back, and then people blame Direct Instruction. Schools must understand the whole job that needs to be done and recognize that not every skill that must be taught is taught in a DI program. ~~ADI~~

MARTIN A. KOZLOFF and MONICA CAMPBELL

## *A Routine (Tools and Steps) for Effective Teaching*

Teaching is *not* as simple as making a cheese sandwich, but neither is it as complicated as mowing grass on a mountain. However, you need a *plan*—sort of like a road map taking you from the first to the last day of the school year. Without a plan, teaching can be confusing, frustrating, and stressful—and students will not achieve as much as they can. Let's call the plan a *routine*, because it's a set of steps you can use again and again.

### Professions Follow Tested Routines

You feel weak. You have a fever. You're coughing your head off. [Not literally, of course.] You visit your physician. The physician follows a routine. Here are the main *steps* and *tools*:

1. The physician **collects information** by asking questions ("When did this start?"), taking physical signs (pulse, blood pressure, temperature), and doing tests (blood, urine).
2. The physician uses the information to **make a diagnosis** of what illness you have. "You have bacterial pneumonia. We'll fix you right up."
3. The physician uses knowledge of your medical history (e.g., allergies), age and weight, diagnosis, and effective medications to **prescribe treatment**; for example, take medication X, drink lots of water, and stay in bed.

4. The physician collects more information in a few days to see if the medication is working (**progress assessment**). If so, you continue the treatment for another week. If not, the physician does more tests, maybe revises the diagnosis ("Gee, you **ALSO** have strep throat. Dang!"), and revises the treatment. "You also need medicine Y. Gargle with salt water four times a day." This step is repeated till you are well again.

For the past 2,500 years, the field of medicine has:

1. Developed and perfected **tools**—for example, collect information; use the information to diagnose (figure out) illnesses; treat illnesses; and check (assess) progress.
2. Developed and perfected a **routine** for *using* the above tools.

Students in medical school learn the **tools** and the **routine** for using them. They're supervised to ensure they know the tools and the routine. They get a medical license only when they properly use the tools and routine. They're fined, lose their license, or even go to jail if they *don't* use the right tools and procedure.

This is a good thing. Imagine if every physician used **different** (and **ineffective**) tools and followed a different (and ineffective) routine! The field

would be chaos. Many patients would die.

Dr. Baloney: "I don't use blood tests to see if patients are improving. I can tell by looking at them." [Oh, sure you can! Some teachers say the same thing. "I just *know* my students are learning to read." Sure you do! How?]

Dr. Quackerton: "I don't use effective procedures described in the book *Chest Surgery*. I invent my own procedures. I like to be creative." [Many teachers say the same thing. "I won't use commercial programs—even if they're tested. I like to be creative." What might parents say to this? "Listen. Save your creativity for arts and crafts at home. My kid isn't *Play-Doh*!"]

If every physician used different (and ineffective) tools and followed a different (and ineffective) routine, the field of medicine would be *just like* the field of education!

### *Help us out!*

Contribute your story of success with DI! We want to hear from you!

You all have stories and it is time to share them. This is *your* journal—let it reflect your stories!

See the directions on page 2 on how to make a contribution. You'll be glad you did.

For instance, education students:

- Are **usually not** taught needed tools—effective and tested curricula, curriculum materials, instruction, and classroom environments—or a routine for using these proficiently.
- Are taught **theories** of instruction that have little to do with the *real* task of communicating with students.
- Are taught methods of instruction (often fads) that *don't* work.
- Are told *not* to use effective commercial curriculum materials, but instead to make up (invent) materials by themselves. **This is impossible.** They don't know **HOW** to do this. Besides, it takes years to develop effective materials in, for example, reading or math. What happens to kids in the **meantime**, taught with poor materials?

Let's look at a routine for **effective** teaching.

## *Steps and Questions in a Routine for Effective Teaching*

Here's the short version. We'll look at each step in detail later. Notice that the steps are in logical order. Each one prepares for the next.

1. **Exactly what** are students going to **learn**, and therefore exactly what are you going to **teach**? This is your curriculum.
2. When you prepare to teach something in the curriculum, determine the **kind of knowledge** the something is. Let's say you're going to teach the definition of "monarchy." *What kind of knowledge is a definition?* Is it knowledge of concepts, facts, rules, or routines? This is important, because *how* you teach (communicate) depends on the kind of knowledge you're teaching.

3. What **phase of mastery** are students ready to work on with the knowledge you're teaching?  
**Acquisition** of new knowledge?  
**Fluency**—accuracy plus speed?  
**Generalization**—application of knowledge to new examples?  
**Retention**—remembering earlier knowledge?

*You need a plan—sort of like a road map taking you from the first to the last day of the school year. Without a plan, teaching can be confusing, frustrating, and stressful—and students will not achieve as much as they can.*

4. What is the **new** knowledge in the new skill you are going to teach? Which **pre-skills** must students *already* know to learn the **new** skill? If the new knowledge is multiplying single digits (3 x 5), which pre-skills do students need in order to learn how to multiply? Do they have to know what 3 and 5 mean? Do they have to know how to count?
5. What are the **instructional objectives** for the knowledge you are teaching? That is, what will students be able to **do** if they learn?
6. Which **examples** will you use to teach new knowledge (acquisition), and then to build fluency, and to help students generalize knowledge, and to review past learning so students retain knowledge?
7. Which **"big ideas"** will help students organize, remember, find, and comprehend new knowledge and connect new knowledge with prior knowledge?
8. How (with which **instructional procedures**) will you teach each knowledge unit so that students achieve the objectives?

9. How will you **test or check** to see if students are learning what you're trying to teach? How will you know if they're making satisfactory progress towards the objectives?
10. What will you do when students **make errors**, don't seem to "get it" from the instructional procedures you are using, or don't retain it?

Believe it or not, that's pretty much it! **PLEASE** read the list of steps/questions *again*. [No, really. Do it.] Get a feel for how the earlier step makes the next step possible. Now let's do each step in more detail.

## *Closer Look at Steps and Questions in a Routine for Effective Teaching*

### **1. Exactly what are students going to learn, and therefore, exactly what are you going to teach? This is your curriculum.**

Let's say you have a semester or a whole year to fill with instruction. Instruction on **what**? What are students going to learn in math, science, beginning reading, literature, history, civics? In other words, what's the **curriculum**? Let's call each thing in the curriculum a **knowledge unit**. Some knowledge units are **small** (there's only a little bit to learn) and are taught in a few seconds. Here's an example: teaching the sounds that go with the letters.

Teacher: "Boys and girls, this letter (points to letter *m* on the board) makes the sound *mmm*." [model] "Say that sound *with* me." [lead] (points to *m*)

Teacher/class: "*Mmmm*."

Teacher: "Your turn. What sound?" (points to *m*) [test/check]

Class: "*Mmmm*."

Teacher: "Yes, *mmm*." [verification]



See? A few seconds.

But some knowledge units are larger. There's more knowledge to teach. There's more back-and-forth communication between teacher and class. For example, two-digit multiplication might take 20 minutes and involve teaching one step at a time.

Your turn. What are the steps in the routine for two-digit multiplication?

45

x12

First, you...

Second, you...

Third, you...

See how there's more to teach?

And some units contain so much that it takes several weeks to teach it all. Think of all you'd teach in the unit "The American War of Independence." You'd teach dates (1775, 1776), places (Lexington, Concord, Philadelphia), persons (Jefferson, Washington, Franklin), groups (Sons of Liberty, Tories, British), events (Stamp Act, Sugar Act, Boston Massacre, Boston Tea Party), causes and effects, concepts ("rights," "the people," "republic"), and much more.

**Where do you get all the knowledge units for your curriculum?** You have four resources:

- **Your state (department of public instruction or board of education) has a "standard course of study" for each subject.** A standard course of study (or state curriculum) lists "curriculum standards," "objectives," or "goals"—things students are supposed to learn. Here are some California curriculum standards for kindergarten literacy, taken from the California State Board of Education website, [www.cde.ca.gov/be/st/ss/engkindergarten.asp](http://www.cde.ca.gov/be/st/ss/engkindergarten.asp). [Our comments are in brackets.]

**READING** [General name for the subject]

1.0 Word Analysis, Fluency, and Systematic Vocabulary Development [More specific reading skills]

*How you teach (that is, the procedure you use) depends on what (the kind of knowledge) you're teaching. There are only six kinds of knowledge. Therefore, you only need to know six procedures (six ways to communicate information) to teach all subjects.*

Students know about letters, words, and sounds. They apply this knowledge to read simple sentences. [Even more specific reading skill]

**Concepts About Print**  
[Very specific]

1.1 Identify the front cover, back cover, and title page of a book. [Something *concrete* that students learn, are taught, and *do*.]

1.2 Follow words from left to right and from top to bottom on the printed page.

1.4 Recognize that sentences in print are made up of separate words.

**Phonemic Awareness**

1.7 Track (move sequentially from sound to sound) and represent the number, sameness/difference, and order of two and three isolated phonemes (e.g., /f, s, th/, /j, d, j/).

1.9 Blend vowel-consonant sounds orally to make words or syllables.

1.10 Identify and produce rhyming words in response to an oral prompt.

1.13 Count the number of sounds in syllables and syllables in words.

**Decoding and Word Recognition**

1.14 Match all consonant and short-vowel sounds to appropriate letters.

1.15 Read simple one-syllable and high-frequency words (i.e., sight words).

**However, no standard course of study includes all that it should.** Developers leave out skills they don't believe are important but *are* important. So, you need more resources to help you select skills to include. Here's another resource:

- **You can access scientific research on different subjects.** Please reread the "standards" on phonemic awareness, above. Not long ago, states did *not* have phonemic awareness in their standard course of study. There was no research showing it was important. Later, when new research showed that phonemic awareness is *essential* for many students, some states **refused** to include it in their standard course of study because developers didn't **believe** it was important. So, many teachers didn't teach phonemic awareness—and their students didn't learn to read. **This means that *you* must find and use current research to make sure you include what's needed in your curriculum.**
- **You can seek the opinions of experts.** Some historians believe an educated person should know certain events *in* history and certain big ideas *about* history (for instance, why successful civilizations

decline—people take their liberties for granted). But your state’s course of study might not include these **big ideas**. Therefore, using the suggestions of experts, add big ideas to your curriculum so students have a high-quality education.

- **You can use your own knowledge.** Your school’s literature curriculum may include important works, but *you* think it should *also* include the novel *To Kill a Mockingbird*, by Harper Lee, and Shakespeare plays. So, include these so **you can teach important concepts**, such as tolerance, the definition of a hero (not necessarily someone wearing armor and wielding a sword), and tragedy.

Now for the second step/question in the routine for effective teaching.

## 2. When you prepare to teach something in the curriculum, determine the **KIND of knowledge the something is**.

How you teach (that is, the procedure you use) depends on **what** (the kind of knowledge) you’re teaching. There are *only six kinds of knowledge*. Therefore, **you only need to know six procedures** (six ways to communicate information) **to teach all subjects**—because you teach all concepts, for instance, *the same way* no matter whether the concepts are in math (equation, curvilinear), chemistry (compound, molecule), literature (metaphor, fiction), or history (republic, constitution). See examples in Figure 1.

Not too hard, is it? *In other words, if you know the subject (the facts, lists, concepts, rules, and routines in history, for example), you’ll be able to teach it.*

## 3. What phase of mastery are students ready to work on with the knowledge you are teaching?

Many teachers merely cover material. *You* want students to *master* it. Mastery means that students:

- Use their **new knowledge accurately**. Teach new knowledge in the phase called **acquisition**.
- Use knowledge accurately, **quickly**, and almost **automatically**. Teach this during the phase of **fluency building**.
- **Apply** knowledge to **new examples** (e.g., new math problems, words to sound out, poems to analyze) in the phase of **generalization**.

*Your standard course of study probably won’t say anything about phases of mastery. It will say the kind of thing students should learn (in the acquisition phase), but it won’t specify building fluency, generalization, and retention of what they learn. You must do better! Plan how to assess and teach all four phases.*

- **Retain** knowledge that you taught in the three earlier phases.

Accuracy, speed, application to new examples, and retention *don’t happen by themselves*. You must teach students to focus on accuracy, speed, application/generalization to new examples, and retention. *Most* teachers and curriculum materials focus only on the **first** phase—*acquisition* of knowledge. The result? Students seldom become fluent (they still plod along, not sure of what to do), can’t generalize to new examples, and forget most of what they learned. That’s how you get the statistics (on low achievement and high drop-out) shown in national studies. Here are definitions of each phase of mastery, and how, briefly, to effectively teach each one:

- **Acquisition of new knowledge.** Let’s say you’re teaching the sound made by the letter *f*, how to multiply two-digit numbers, the definition of metaphor, or the steps for writing a paper. In this first phase (acquisition), provide **explicit** (tell and show) and **systematic** (step-by-step) instruction. This means: (a) **Model** or show students how (for example, model how to multiply two-digit numbers), (b) **lead** students though (“Do it with me.”), (c) **test/check** to see if students learned what you **just** modeled (“Your turn to multiply these numbers.”), and (d) **correct any errors** immediately.
- **Fluency**; for example, reading, spelling, defining vocabulary words, listing the phases of cell division, or solving math problems **accurately and quickly** (speed). Build fluency by (a) **showing (modeling)** how to “go faster” (“I’ll show you how to read these words the *fast* way.”), (b) having students **practice** the **small elements** of a skill (e.g., to become fluent at solving addition problems, students must be fluent at **writing** numbers and **saying** the addition in their heads), (c) having students practice the **whole thing** (e.g., reading whole sentences) so they become fast, and (d) giving “**speed work**” (short intervals of going fast; for example, reading word lists and sentences).
- **Generalization of knowledge to new examples.** For example, students accurately sound out 50 common words—sit, am, sat, at, run, rat, mat. Now they use this “**how to**” knowledge to sound out **new, similar** words—sam, ram, sun, mat. Teach generalization by showing students how to **compare** earlier (already known) and new examples (e.g., words) to see if they are the same type, and then to use earlier knowledge (e.g., how to read sit,

**Figure 1**  
*Six Procedures for Teaching All Subjects*

**Simple fact knowledge**

The U.S. Constitution was signed in Philadelphia.

Jefferson City is the capital of Missouri.

**Instructional procedure**

Say (model) the fact. Have students repeat (test/check) to see if they got it.

**List knowledge**

The six New England states are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

**Instructional procedure**

Teach one or two items on the list and have students repeat. Do more items on the list. Have students repeat, and then have students repeat the **whole** list (test to see if students got it).

**Basic concept knowledge**

Colors, shapes, positions, etc.

**Instructional procedure**

Show a range of examples (e.g., of red things) and name each one ("This is red."). Show contrasting *non*-examples (things with the same shape and size, but **not** red) and name each one ("This is NOT red."). Then give the examples and non-examples again, and ask, "Is this red?" (Test to see if they got it.)

**Higher-order concept knowledge**

Monarchy, political system, granite.

**Instructional procedure**

First, teach the verbal definition: "Monarchy is a political system that involves rule by one person." (Test to see if students got it.) Then give **examples** of monarchies and name each one ("This is monarchy."). Then give contrasting **non-examples** that are the same in many ways as the **examples** but are missing the essential **feature**—rule by one person—and name each one ("This is *not* monarchy."). Then give the examples and non-examples and ask, "Is this monarchy?" (Test to see if students got it.)

**Rule-relationship knowledge**

Rules connect whole **sets** of things.

Democratic nations (things that are democratic) tend not to go to war (another set of things) with other democratic nations.

All cats (one set) are felines (another set).

**Instructional procedure**

First teach students to **say** the rule. Then give examples of the rule and ask students if and how the examples fit the rule. Then give non-examples of the rule and ask students if and how the **non-example** fits/does not fit the rule.

**Cognitive routine knowledge**

Multiplication problems, analyzing poems, writing essays—all things with **steps**.

**Instructional procedure**

Similar to teaching lists, model each step; have students do the step with you; and then have students do the step on their own (test/check). Then teach the next step the same way.

Then have students do the first two steps in a sequence. Teach the next step and then have students do the first three in sequence. Repeat until students do all of the steps.

am, sat, at, run, rat, mat) to read the new (but similar) words.

- **Retention.** This means that accuracy, fluency, and generalization are strong even though **time** has gone by and **new skills** have been learned. Build retention by immediately **reviewing** new material and **reteaching** as needed and by frequently reviewing portions of what was learned/taught earlier (this is called “cumulative review”). Reteach as needed.

IMPORTANT! Your standard course of study probably **won’t say anything** about phases of mastery. It will say the *kind* of thing students should learn (in the acquisition phase), but it won’t specify building fluency, generalization, and retention of what they learn. **You must do better! Plan how to assess and teach all four phases.**

#### 4. What is the new knowledge in the new skill you are going to teach? Which **pre-skills** must students **already know** to learn the new skill?

*You have to answer these questions in order to teach, period.* Here’s an example: paragraph two of the Declaration of Independence. Read the whole beautiful thing at [www.law.indiana.edu/uslawdocs/declaration.html](http://www.law.indiana.edu/uslawdocs/declaration.html).

The **objective** is that students say the core **principle** (in italics) of the theory of government proposed in the Declaration:

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, that *whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to insti-*

*tute new Government*, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness.

To get the core principle (new knowledge), students **must already know**

*Instructional objectives tell you what students are supposed to DO as a result of instruction, and therefore what you will teach, and therefore what you will assess. Therefore, develop objectives BEFORE you plan instruction and assessment. Make sure that you state, teach, and assess objectives for both the preskills you review and the new skill that you teach.*

(that is, have pre-skills about) certain vocabulary words—or concepts. Which ones? “Form of government”? “People”? “Institute”? “Unalienable rights”? “Secure these rights”? Can you find other words? [Go ahead, we’ll wait.] Knowing the definitions of these vocabulary words is a **pre-skill** for learning the core principle (the new knowledge). Why? Because students won’t know what *you* or the Declaration **are talking about** if they don’t know these words. Now, **when** should you teach these words? Of course! Teach the definitions *before* students read the Declaration. How *much* before? **NOT right before** (!), because then they’d have **too much** to learn and remember. Instead, teach the definitions over the course of a few days before they read the Declaration. And *review* these vocabulary words

**right before** you start reading the whole document.

“Okay, before we begin the Declaration of Independence, let’s review our words. I’ll say a word, and you tell me the definition. Unalienable right: Jerry...” [If a student makes an error, correct it by modeling the correct definition and having the class repeat it.]

**How do you know what the pre-skills and new skills (knowledge) are?** One way to find out is do a **task analysis** of what you want students to learn. For instance, from the California course of study that you saw earlier:

1.4 Recognize that sentences in print are made up of separate words.

You plan to teach this. But **what** is the “this” you’ll teach? Let’s do a task analysis. *First, what is the new skill?* What does it *mean* to (that is, what do students *do* when they) “recognize that sentences in print are made up of separate words”? Answer: When students recognize that sentences in print are made up of separate words, they show this knowledge by reading or hearing a sentence and **then** identifying (saying) the separate words in it.

Now, *what are the pre-skills needed to learn the new skill (above)?* To find out, analyze the new skill (stated above). What do you have to know already to learn this? Students have to know how to:

- Identify a sentence.  
“big”—Not a sentence.  
“is”—Not a sentence.  
“My dog is big.”—A sentence.
- Read a sentence. “The cat sat.”
- Identify **separate** words. “The” “cat” “sat”

Do you see that *if students “have” the above three pre-skills, they will be able to learn the new skill, because the new skill uses*



these three pre-skills? And if they don't "have" these three pre-skills, they will struggle to learn the new skill?

So, make sure to teach the pre-skills **earlier**, and then **review** them before you teach the new skill.

### 5. What are the **instructional objectives** for the knowledge you are teaching? That is, what will students do if they learn?

Instructional objectives are **statements** of exactly what students will do. Use these statements of objectives to:

- **Plan instruction.** For example, an objective (for the phase of acquisition—new knowledge) is that students accurately define the words “absolute monarchy,” “constitutional monarchy,” “aristocracy,” “democracy,” “republic,” “theocracy,” “oligarchy,” and “timocracy.” So, this is exactly what you teach.
- **Assess instruction and achievement.** Let's say the objective (for the phase of acquisition—or new knowledge) is, “Students accurately define 8 out of 8 (100%) of the words ‘absolute monarchy,’ ‘constitutional monarchy,’ ‘aristocracy,’ ‘democracy,’ ‘republic,’ ‘theocracy,’ ‘oligarchy,’ and ‘timocracy’ **each within 15 seconds.**” So, after you teach the definitions, assess whether students *do* in fact *accurately* define all of the words each within 15 seconds.

“I'll say a kind of political system and you define it. Get ready...”

This assessment information tells you if you have to **reteach** some of the definitions, or if students now have the **pre-skills** to go on to material that *uses* these definitions.

Develop objectives for *all four phases* of mastery, for everything you're teaching. It's not hard! For

example, once students accurately define the above eight concepts (phase of acquisition), think of **fluency** objectives. “Students define 9 out of 10 concepts (90%) accurately, and each within **10 seconds.**”

And **generalization**: “Students use definitions of political systems to

*Big ideas help students to make predictions. Therefore, it's important to begin larger units of instruction with big ideas that carry students through the unit as new material is added, to remind students of big ideas as the unit goes along, and to end the unit with the big idea—to make the point.*

develop at least one example of each on their own.”

And **retention** (a week later): “Students accurately define at least 8 out of 10 concepts, each within 15 seconds.”

In summary, instructional objectives tell you what students are supposed to **DO** as a result of instruction, and therefore what you will **teach**, and therefore what you will **assess**. Therefore, **develop objectives BEFORE you plan instruction and assessment.** Make sure that you state, teach, and assess objectives for both the **pre-skills** you review and the **new skill** that you teach.

### 6. Which examples will you use to teach new knowledge (acquisition), and then to build fluency, and to help students generalize knowledge, and to review past learning so students retain knowledge?

You can't teach **new** (phase of acquisition) **concepts** (e.g., red, linear function), **rule-relationships** (e.g., when demand increases, price increases), and **cognitive routines** (sounding out words, solving math problems) **with one example.** *One example doesn't clearly show the important features.* For instance, if you hold up a pencil and say, “This is a pencil,” students won't *see what* makes it (defines it) as a pencil. Some students will think that “pencil” means thing with a point. Other students will think that “pencil” means yellow stick. Likewise, if you show students how to multiply parentheses— $(3 + 4)(6 + 5)$ —most *students will not remember all of the steps* (first multiply the “first” numbers, 3 and 6; then multiply the “outside” numbers, 3 and 5; etc.) *from just one example.* So, you need **a set of examples** to teach concepts, rule-relationships, and cognitive routines. Here are guidelines for selecting and presenting examples:

- a. *Use a wide range of examples.* For instance, to teach red, use examples ranging from dark to light. To teach addition and subtraction of fractions, use fractions in which the numerator is sometimes smaller and sometimes larger than the denominator ( $2/5$ ,  $7/3$ ).
- b. *Use the most common or general examples first.* Teach exceptions and unusual examples later. Obviously, you would teach students to read “cat,” “sit,” “run,” and “sun” before you teach them to read “zither,” “either,” “Xerxes,” and “enough.”
- c. *Put examples and non-examples next to each other so students can easily compare them.* For example, to teach the concept “red,” hold up a red square and say, “This is red.” Hold up a blue square and say, “This is *not* red.” Because they are both squares, it must be *color* (red, signified by the word “red”) that makes the difference between “This is red” and “This is *not* red.”



You also use sets of examples to work on **fluency, generalization, and retention**. For example, you select vocabulary words to have students define quickly (fluency), to build generalization (“Here’s a new one. Is this an example of monarchy?”), and to review—to build retention.

## 7. Which “big ideas” will help students organize, remember, find, and comprehend new knowledge and connect new knowledge with prior knowledge?

Here are two big ideas:

“Boys and girls, **adding is just counting forward by ones**. [Counting forward by ones is a pre-skill for addition. So, it has already been taught.] For example,  $7 + 3$  is just, start with seven and then say three more—‘eight,’ ‘nine,’ ‘ten.’”

“When civilizations are successful—they provide members with necessities and comforts and liberties—members take their civilization for granted. They forget the hard work done by ancestors to produce the civilized life that the current generation enjoys. Then, members become lazy, weak, bored, and even harshly critical of their civilization. At this point, they are unwilling and too weak to fight their enemies. And that is the end.”

**These big ideas help students to make sense of what might be difficult.** “I get it. Addition isn’t hard! Just count forward.”

**Big ideas also help students connect old and new knowledge—** for example, the common fate of Athens and then Rome, self-destroyed, in part, by their own success. **And big ideas help students to make predictions.** Therefore, it’s important to begin larger units of instruction with big ideas that carry students through the unit as new material is added, to remind students of big ideas as the unit goes along, and to end the unit with the big idea—to make the point.

## 8. How (with which instructional procedures) will you teach each knowledge unit so that students achieve the objectives?

Please review quickly the seven steps leading to this one. [Go ahead.] Do you see how the early steps prepare you to do this one? *Instruction is communicating with students.* What are you communicating? **Information.** Following are main features of a **general**

*Instruction begins with review, especially review of background knowledge (pre-skills) relevant to the new instruction. This is especially important for diverse learners.*

**procedure** for effective communication (instruction). Remember, this general procedure is modified a bit depending on the kind of knowledge you are teaching. [Please re-read #2 above. No, really! Do it.] The procedure below is teaching decoding/sounding out words, a beginning reading skill. Please read the procedure slowly. Then go back and read only what the teacher and students *say* (starting with D, below), so that you see how fast it goes.

### *General Procedure for Instruction Focusing on Decoding*

#### **Setting Up Instruction**

A. New material to be taught is **properly selected**. For example:

- It is consistent with scientific research. [Scientific research says it’s important to teach students to sound out or decode words, using knowledge (pre-skill) of the sounds that go with the letters (*m* says *mmm*); stu-

dents should NOT use cues on the page (such as pictures) to *guess* at words.]

- It is specified by a state standard course of study, which is based on scientific research. **In a standard course of study in Language Arts, Grade 1**, students use phonics knowledge of sound-letter relationships (*f* says *fff*) to decode (sound out) regular one-syllable words when reading words and text.
- The material is taught at the **right time**. [Research says you should teach students to *hear* the separate sounds in words (this is called phonemic awareness) *before* you teach how to decode words (which *requires* that students hear the separate sounds—pre-skill). If you’ve already worked on phonemic awareness, students have the needed pre-skills for decoding.]

B. Instruction is designed on the basis of and **focuses precisely on objectives** stated as what students will **do**. [So, for 5 minutes during each lesson, instruction will focus on decoding new words, and on **nothing** else.]

C. **Instruction begins with review**, especially review of background knowledge (pre-skills) relevant to the new instruction. This is especially important for diverse learners. For example, before you start on the new skill—decoding—review important pre-skills (background knowledge): (a) phonemic awareness (“Listen to the sounds in *rrruuunnn*. What is the first sound in *rrruuunnn*?”) and (b) classroom skills (“Remember, when my hand is up, it’s *my* turn to talk.”).

D. The teacher **gains student readiness**: attention, sitting properly, materials handy.

“Boys and girls!”

Or, “Eyes on me.”

Or, “My turn.”

Or, “Get ready to write. Pencils up, sitting tall, feet on the floor, back against the seat. [Check.] I love the way you all got ready so fast.”

E. The teacher **frames the instruction** by stating:

- The **kind** of new knowledge students will learn. “Boys and girls, you’re going to learn to *read* words!”
- The **objectives**. “Today you will read words like *ma* and *am*!”
- **Big ideas** that help students organize, remember, and comprehend the new knowledge and connect new knowledge with prior knowledge. For example, “Here’s a word [points to *ma* on the board]. See the letters [points to *m* and *a*]. **Each letter makes a sound.** [Big idea] You know these sounds! This one [points] says *mmm*. And this one [points] says *aaa*. **To read a word, we just say the sounds!**” [Big idea]

#### Focused Instruction: Model, Lead, Test/check, Verification

F. The teacher **models** or presents new information. “Boys and girls, I’ll show you how to sound out this word. Here I go.” [Touches under each letter and says the sound: “Mmmmaaa.”]

G. The teacher **leads** students through application of the new information.

“Sound it out **with me**. Get ready. Mmmmaaa.”

H. The teacher gives an **immediate acquisition test/check** to determine whether students learned the new information. “Your turn. Get ready. Mmmmaaa.”

I. If the students are correct, the teacher gives a **verification** (specific praise): “Yes, mmmmaaa. You did it all by yourselves!”

If students make an error, the teacher immediately corrects it:

“Listen: Mmmmaaaa. Your turn.”

[Mmmmaaa.] “Yes, mmmmaaaa. Now you’ve got it!”

J. If the new material is a concept, rule-relationship, or cognitive routine, the teacher gives more examples and non-examples so students can compare and contrast them and can identify the common essential

*One of the biggest mistakes you can make is to not respond properly to errors. If some students err and you just go on, students will make the error again and again. And if the knowledge they don't have is a preskill for later learning, they will not learn what is taught later, either. It is important to respond to errors.*

features and the important differences. For example, *ma*, *man*, *at*, *mat*.

By placing *ma* and *man* next to each other (**juxtaposing** the examples), students can see that *m* and *a* are the same, and make the same sound, but that *n* (which *clearly* sticks out) says something different. What does the juxtaposition of *at* and *mat* show?

#### Closing

K. The teacher gives a **delayed acquisition test** (calling on both the group as a whole, and then on individual students) to see if students learned *all* the information presented. **The teacher presents all of the examples used and has students respond.** For example:

“When I point to a word (on the list), you read the word. First word, ...”

Of course, the teacher corrects any errors, as in I, above.

L. The teacher **reviews the instruction** (e.g., main things taught) and states how the information is relevant to **next** lessons.

M. The teacher uses information from the delayed acquisition test (K) to see if students have mastered the new material and can advance to the next step of instruction (new words to sound out), or whether reteaching or more intensive instruction is needed for some students.

#### 9. How will you test or check to see if students are learning what you’re trying to teach? That is, are they making satisfactory progress towards the objectives?

You assess progress in each phase of mastery. In the general procedure, above, we used an immediate acquisition test (H) and a delayed acquisition test (K), followed by error correction, if needed, to ensure accuracy. We will also assess fluency, generalization, and retention. How?

**Fluency.** Let’s say that so far in the phase of **acquisition**, you’ve taught students to decode *am*, *ma*, *at*, *mat*, *it*, *sit*, *sat*, *fat*, and *fit*. A delayed acquisition test (Point to each word and say, “Your turn. What word?”) shows that the class is accurate and reads each word in about 5 seconds. So now, to build fluency (accuracy plus speed) you write all of the words on the board and say, “I’ll show you how to read our words the *fast* way.” The objective is for students to read all of the words accurately and each one in about 3 seconds. If they don’t quickly achieve this **fluency objective**, perhaps they need more practice on the sounds that go with the letters, or with sounding out words.

**Generalization.** If students accurately sound out *am, ma, at, mat, sit, sat, fat, and fit*, then they ought to be able to sound out new and similar words made with those same letters, such as *fas, mas, tam, tim, min, fin*. This is called a generalization set. Maybe the objective is that students read 5 out of 6 correctly, and each in 4 seconds or less. If they don't quickly achieve this generalization objective, perhaps they need more practice on the sounds that go with the letters, or with sounding out words.

**Retention.** Look at all of the words students have been working on: *am, ma, at, mat, it, sit, sat, fat, fit, fas, mas, tam, tim, min, fin*. To build retention, review a sample of these each day. Add new ones to the list and review these, too. Each review sample is called a retention set. Maybe the objective is that students read 9 out of 10 correctly, and each within 4 seconds. Again, if students don't achieve this retention objective each day, perhaps they need more practice on the sounds

that go with the letters, with sounding out words accurately, and with fluency.

### 10. What will you do when students make errors, don't seem to "get it" from the instructional procedures you are using, or don't retain it (forget it)?

One of the biggest mistakes you can make is to not respond properly to errors. If some students err and you just go on, students will make the error again and again. And if the knowledge they don't have is a pre-skill for later learning, they will not learn what is taught later, either.

It is important to respond to errors with the proper amount and type of correction. If students simply weren't paying attention, or just need a little more practice, use **simple error correction**. Model the information again and then have the students do it. If students make errors again and again, use what we call "**part-firming**." That is, correct (model and have students

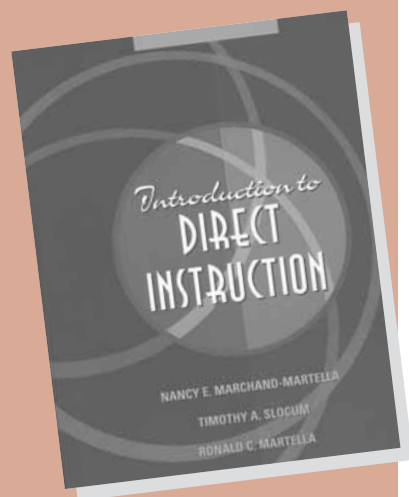
practice) all of the skills that are a part of a task. For example, if they miss step 5 in a math problem, have them back up to step 2 and start over. If students still make errors, you probably have to **reteach** the skill. And finally, if some students still don't make errors, they may need a more **intensive** kind of instruction. **ADI**

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