

EFFECTIVE School Practices

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FOCUS: ROADMAPS FOR SUCCESS

CONFERENCE NEWS

- Director's Award 1
Excellence in Education Awards 2

FROM THE FIELD

- Letters 8

IMPLEMENTATION NEWS

- No Excuses: Houston Principal Thaddeus Lott Puts Failing Schools to Shame
Tyce Palmaffy, *Policy Review* 11

PERSPECTIVES

- Myths and Truths About Direct Instruction
Sara G. Tarver, University of Wisconsin-Madison 18
Utah Schools Need Solutions, Not "Holy Wars"
Stevan J. Kucik, *Deseret News*, Utah 23
Direct Instruction at Davenport School in Genoa, Illinois
David Ziffer, Batavia, Illinois 24

RESEARCH

- Promising Programs for Raising Student Achievement: A Resource
Guide for Redesigning Low-Performing Schools
The American Federation of Teachers 27
Abstract from *What Works in Education*
Judy Crandall, John Jacobson, Howard Sloane, Editors,
Cambridge Center for Behavioral Studies 61

BOOK REVIEW

- A Review of *War Against the Schools' Academic Child Abuse* by
Siegfried Engelmann
Richard Nadler, Overland Park, Kansas 66

ADL

Philosophy of *Effective School Practices*

1. Teachers are responsible for student learning.
2. The curriculum is a critical variable for instructional effectiveness.
3. Effective teaching practices are identified by instructional research that compares the results of a new practice with the results of a viable alternative.
4. Experiments should not be conducted using an entire generation of Americans. The initial experimentation with a new practice should be small in scale and carefully controlled so that negative outcomes are minimized.
5. A powerful technology for teaching exists that is not being utilized in most American schools.

Effective School Practices is published quarterly by the Association for Direct Instruction. The mission of the Association for Direct Instruction, as stated in the by-laws, is to promote the improvement of educational methods.

The name *Direct Instruction* originated with the highly effective instructional model first developed by Zig Engelmann in Project Follow Through during President Johnson's Great Society legislation. Although the evaluation of Project Follow Through showed the Direct Instruction model to be far more effective than the other models on every identified outcome, education in America remained generally unchanged.

A few educators, impressed by the extraordinary results of the original Direct Instruction model and the programs that were developed as DI evolved, formed the Association for Direct Instruction in 1981.

Today, this organization is a vanguard in promoting school practices that have been validated as effective through the use of the scientific method in educational research.

The Association for Direct Instruction was incor-

porated in 1981 in the state of Oregon for educational purposes. ADI is a nonprofit, tax-exempt corporation under Section 501(c)3 of the Internal Revenue Code and is a publicly supported organization as defined in Sections 170(b)(1)(A)(ii) and 509(a)(1). Donations are tax-deductible.

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Director's Award

The Director's Award was given out for the first time at the 1997 Eugene Conference. Bob Dixon, ADI's Executive Director, created that award to meet a need for recognition that isn't met by other ADI awards. Bob felt that in his position, he was privy to "inside information" on outstanding contributions to both Direct Instruction and to the Association for Direct Instruction that didn't fall neatly into other categories, such as exceptional teaching, etc. The Director's Award is unique among ADI awards in that the Executive Director nominates and selects recipients.

It was fitting, then, that the very first Director's Award went to Bonnie Grossen, whom most of you know as the editor of *Effective School Practices*. Bonnie makes numerous quiet but profound contributions to Direct Instruction "behind the scenes." She has, for example, written drafts of state legislation that have passed as legislation with remarkably few changes. She has been instrumental in bringing about the decision of the American Federation of Teachers to emphasize to its members the effectiveness of Direct Instruction. Time after time, Bonnie makes similarly crucial contributions to Direct Instruction, almost always without fanfare and publicly expressed gratitude.

Bonnie's substantial contributions to the Association for Direct Instruction fall within two categories. First, she has turned *Effective School Practices* into a highly informative, well-respected professional journal. And she did so under difficult circumstances. During a period when ADI was experiencing financial challenges, there simply wasn't enough cash available to publish the journal at the rate of four issues a year. Bonnie has worked a breakneck schedule to catch up and rectify a situation over which she had no control to begin with.

Speaking of finances, now that ADI is in a healthy financial position, we can admit that at one time a few years ago, ADI's financial management was a disaster. Working purely as a volunteer member of ADI's Board of Directors, Bonnie worked her way through piles of financial data to establish standard bookkeeping and accounting practices. That accomplishment put ADI in a position to develop a sophisticated financial management system, currently under development, which will ensure that we can deliver the most benefits to our members possible for each dollar of income.

Bonnie was given a bouquet of flowers, a gift certificate to a Eugene restaurant, and a plaque—all token representations of the profound gratitude we throughout the Direct Instruction family have for all of Bonnie's selfless efforts on behalf of children.

CONFERENCE NEWS

Coming Next Issue...

view from Askance

A "Regular Column" by ADI Executive Director Bob Dixon

In Next Issue: "In Defense of Really Rotten Children's Literature"

1997 Excellence in Education Awards

Wayne Carnine Most Improved Student Awards

Two outstanding students were chosen for Wayne Carnine Student Improvement Awards this year. Jeremy Bush is a fourth grader at Beale Elementary School in Gallipolis Ferry, West Virginia. Though he began kindergarten happy and eager to learn, Jeremy had difficulty acquiring kindergarten skills. His early enthusiasm faded and was replaced by frustration and discouragement as his classmates learned to read. When Jeremy was tested for learning disabilities he scored in the average ability range, though as a first grader, he still could not recognize letters, sounds, or numbers. As the school psychologist said, "Whatever the reason for Jeremy's reported poor progress, it is not for reasons of low mental ability." Jeremy's mother reported that he cried every day and did not want to attend school.

After two years, Jeremy enrolled at Beale Elementary School. Judy Browning, the SLD teacher, and the diagnostician explained to Jeremy and his mother what Direct Instruction is and how it differs from the whole language approach used in Jeremy's previous classrooms. They said they thought Jeremy could learn to read. "Little did we know," says Judy Browning, "that he would begin to take off soon after my colleague and I began working with him...his brain was like a sponge and he began reading everything in sight, letters, signs, anything and everything!" In the first year, Jeremy completed *Reading Mastery Fast Cycle*. In the second grade, his regular teachers said Jeremy was reading better than their regular education students. Jeremy still had some processing problems and reversals that showed up occasionally, but he was excelling. By his third grade year, he was reading in *Reading Mastery V*. He was learning at an incredible rate and he enjoyed going to school. When Jeremy was given his three-year evaluation he was reading at the fifth-grade level. As Judy Browning points out, Jeremy did not receive any other special services, nor was he tutored. "Jeremy just worked hard," she says, "and Direct Instruction gave him the key to unlock the world of reading."

As a young child, Andrew Baatz suffered a brain injury. At age five, he was diagnosed with a mild mental impairment and attention deficit disorder. Andrew was enrolled in a regular kindergarten class with half an hour of resource daily, part of which

was used in regular class to help him sit still, pay attention and be quiet. In the resource room, Andrew was taught phonological awareness and attending skills through *Reading Mastery I*. It was this time, says Resource Teacher Rosemary Appenheimer, which had the greatest impact on Andrew's academic development. "At first Andrew could only attend for short periods of time...by the end of the year Andrew could attend for nearly a whole lesson. He knew his sounds and could blend better than many of the regular students."

In the first grade, Andrew struggled to conform to the regular class, but his behavior was erratic and disruptive. However, in the resource room he was moving through the beginning levels of *Reading Mastery*, *Spelling Mastery* and *Connecting Math Concepts* and, by the second grade, Andrew could read. As Rose Appenheimer says, "This ability to read opened up a whole new world for him. The more he read, the more he learned. And the more he learned, the better he read." Andrew enjoyed school and was given more regular education classes, though Rose Appenheimer says he still needed the DI programs for the structure and careful sequencing of skills they provided. One week Andrew even won the regular class spelling bee.

When Andrew was in third grade, the district implemented full inclusion. By this time Andrew had a solid foundation in basic skills and a love of learning that made the transition a smooth one. "In fact," says Rose Appenheimer, "he gave the teacher his full attention, with the greatest enthusiasm for anything she did or suggested." And Andrew's enthusiasm infected the rest of the class. Now in the fourth grade at Mary Morgan Elementary School in Byron, Illinois, Andrew is a successful student—he gets A's and B's—and he's well-liked by peers and teachers.

Excellent Teacher Award

First grade is often a critical beginning in the intellectual and social lives of children. For the hundreds of students in whom Linda McGlocklin has instilled a love of learning, it is a promising beginning. Linda has been teaching first-grade for almost twenty-five years at Evergreen Elementary School in Spokane, Washington. She believes all students can learn if taught carefully, equating student failure with teacher failure. Linda has earned the respect of colleagues and the admiration and

gratitude of parents and students. One parent says Linda was able to do what she, the parent, had thought impossible, that is, teach her daughter with Down's Syndrome to read: "Thanks to the phenomenally successful start [my daughter] was given in first grade, [she] is doing quite well academically, especially in reading. She was able to take a district-wide assessment test this year in third grade without special assistance." Linda includes families in her program, discussing expectations with parents and soliciting their support as regular volunteers in the classroom. As a model DI teacher, Linda is also frequently asked to accept student teachers from local colleges and universities. Linda enjoys opening her classroom to visitors—student teachers, parents, colleagues—so all can witness the reality of confident, first-grade readers, writers and math students.

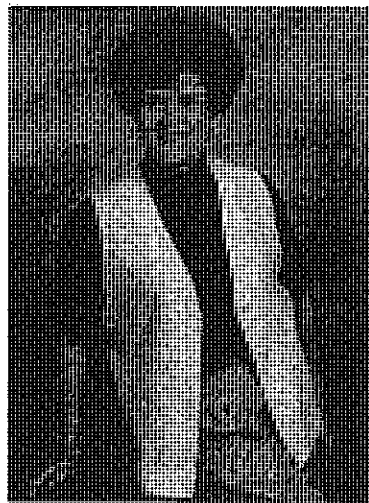


Linda McGlocklin,
Spokane, Washington

Linda also acts as a consultant and trainer for SRA and ADI. She's done this in exchange for the DI materials she uses in her classrooms because the district does not provide them. In her nomination, Dr. Nancy Marchand-Martella says, "I can tell you it has not always been easy for Linda, but she has persevered despite claims of insubordination and district conflict (in not using the district approved curriculum). She is the type of teacher I want my daughter to have because I know my daughter will be 'on the road to college' in no time." Despite district disapproval, DI is being used in other grades at Evergreen because of the unqualified success Linda has demonstrated.

Thoma "Kay" Brown is a Resource Specialist and a vigorous advocate of DI in the school districts she serves. Over the last five years, Kay has been meeting with administrators, working with superintendents and principals, and training teachers with the goal of improving instruction through DI. She often works into the evening and during her vacation to make sure teachers have the resources and support they need. Kay's dedication is exceptional, but what makes her story extraordinary is that Kay has promoted DI implementation in California. Jeanette

Daniel, Assistant Professor of Special Education at CSU, Chico, says, through Kay's efforts, several school districts in Tehama County have adopted *Reading Mastery*, in spite of the state's refusal to allow instructional materials funds to be used. "[Kay], on her own, attends your conferences in Eugene, has become a DI trainer, and spreads the accolades of DI to whomever will listen, and occasionally to those not interested."



Toma "Kay" Brown,
Orland, California

Kay was nominated by staff members of the Richfield Elementary School District who are impressed with the achievement gains their students have made since DI implementation. Superintendent Shirley Mongini says Kay is relentless in achieving their goal of having all children reading at grade level within three years. "Kay has excellent class-

room management and organizational skills. She has the unique ability of meeting the needs of all students, whether they are non-English speaking, Special Education, or Title I."

Excellent Principal Award

As principal of St. Helens Elementary, Mike Mendenhall transformed the lowest achieving school in Longview, Washington into a model of creative innovation and remarkable improvement. Student learning is the focus of Mike's vision for St. Helens. Though the school has the highest proportion of children from low socioeconomic families in the district, Mike has never let this be an excuse for poor student achievement. He believes the best way to help his students is to give them the tools to be academically successful and has collaborated with staff members, families and community leaders to make that possible.

Among the many changes Mike has made is the implementation of an alternative calendar to extend the school year and minimize the summer drop in achievement. When Mike saw the success special education students had with Direct Instruction programs, he had all regular education teachers and educational assistants trained in Direct Instruction.

Reading scores improved dramatically. In 1993, 4th graders were reading at the 25th percentile. Three years later, they were reading in the 46th percentile. Math scores increased in the same time period from the 28th to the 53rd percentile. *DISTAR Language* is now being used in a new program to help Hispanic families learn English. K-1 teachers have added a



Mike Mendenhall,
Longview, Washington

literacy immersion writing program to DI reading and language, producing student readers and student writers in kindergarten. Mike was also the first in Longview to start a breakfast program when surveys showed that many students came to school without breakfast. That program was extended to a summer breakfast and lunch program when staff realized

how students' nutrition suffered over the summer months. Mike instituted an after-school activities program after police studies showed children were most vulnerable between the hours of 3:30 and 5:30 p.m. In order to provide at-risk boys with an alternative to gangs, Mike organized Boy Scout Troop 304 which earned the Presidential Award this year. Mike is the Scout Master and plans on taking the boys to Camp Fremont in New Mexico next year. Whenever there's a problem, Mike works toward the solution. His leadership has made St. Helens a great place to learn.

When standardized test scores from 1990 to 1994 showed Tuttle Elementary students losing an average of 3-5 percentage points a year in reading using the district-approved whole-language program, Principal Nancy Dubin began looking for a successful reading program and one used in schools with populations similar to Tuttle's. About 70% of Tuttle's 1,024 students qualify for free or reduced lunch. About 23% are not native English speakers. Over half of the students participate in Exceptional Student Education programs, including gifted, emotionally handicapped, language, speech and hearing, and learning disabled. Julie Eisele began working at Tuttle in 1994, the year DI was implemented. "My first encounter with Nancy Dubin," she says,

"was as she sat poring over lists of approximately 1,000 children who needed specific reading group placements for the coming year. It was 6 p.m. with no end in sight. That seems to depict the stamina Nancy has shown throughout the transition to a structured, strategy-based program."

Nancy's investment in Tuttle is paying off. The DI curriculum has been expanded to include *Connecting Math Concepts* and each year the school's scores on the National Achievement Test and on Florida Writes! continue to improve. Behavior referrals have declined and are fewest during the school-wide reading block. Florida Governor Lawton Chiles visited Tuttle last year in recognition of its exemplary academic progress. Parents also are very supportive of the changes at Tuttle, which extend beyond the classroom. In fact, Tuttle's deep involvement in its community earned it a Five Star Rating by the state. Nancy continues to work towards improvement at Tuttle. Through her efforts, the staff and school community have adopted uniforms as a positive means of instilling pride and a sense of belonging at Tuttle. Nancy is an innovative role model for all educators.

Excellent Researcher Award

Dr. Daniel Hursh, Professor of Educational Psychology at West Virginia University, is a dedicated researcher in psychology and effective educational practices and a tireless advocate of Direct Instruction. The breadth of his research is reflected in the diverse topics of his twenty-eight professional publications, including applied behavior analysis, language development and remediation, and academic instruction. He sponsored an issue of *Education and Treatment of Children* that led to great interest and better understanding nationally of DI. He also has organized numerous conferences and presentations on DI.

Dan first learned DI in public schools in Eugene during a sabbatical early in his career and has since spent a great deal of time in public school classrooms. In fact, Dan was nominated by staff members of Braxton County Middle School where he has done his most recent work—initiating and implementing DI curricula with sixteen teachers. Dan worked closely with the principal, Dr. Bob Rentschler, in training and supervising the teachers: "Taking into consideration that Dan did this without SRA trainers, and that he chose to 'work in the trenches' rather than theorize about the benefits of DI curricula at WVU, his efforts are worthy of an ADI Excellence in Education Award." Dan's work is an example of the partnership possible between uni-

versities and public schools and the remarkable student achievement that can come of that collaboration. As one BCMS staff member says, "Dr. Hursh built a bridge between scientifically designed, educationally sound curriculum and teaching methods, and teachers who were willing to work hard to help their students. Moreover, he caused us to be less myopic in the way we spent time. Now we concern ourselves with important matters, rather than only daily urgencies."

Excellent Trainer/Supervisor Award

Since beginning her career as an elementary school teacher in the Pine Bluff School District eighteen years ago, Lenora Porter has been committed to the education of all children. Her success in the classroom—Lenora now teaches third grade at Greenville Elementary school—has earned her the recognition of the Arkansas PTA and the Pine Bluff School District, both of which named her their Teacher of the Year in 1991.

Lenora is often asked to lend her energy and expertise to other organizations. She has served as president of Jefferson County Reading Council and Delta Kappa Gamma. She has presented in workshops for the Arkansas River Education Service Cooperative and the Arkansas Federal Programs Convention. In 1994, Lenora became a Direct Instruction Coordinator, acting as a liaison between classroom personnel and DI consultants and trainers from J/P Associates. Lenora's responsibilities include assisting with instructional groupings, developing materials list and dispensing materials to the staff, monitoring DI classes and collaborating with teachers to test and place new students. In her nomination, Greenville Elementary School Principal, Paula Webb, says Lenora has been instrumental in changing teachers' learning strategies through DI. "The program has provided the enrichment our students needed...her ability to influence students and teachers has been evident in our successful program." Lenora works well with the entire staff and is an inspiration to the frequent visitors from other school districts who come to observe the school's DI program. In recognition of her success at Greenville, J/P Associates named Lenora 1997 DI Coordinator of the Year.

As an elementary special education teacher in Lexington, Kentucky, Dr. Marie C. Keel used DI programs to provide the most effective instruction for her students. She remained committed to DI throughout her doctoral studies and, upon receiving her degree in special education, moved to At-

lanta to take a position as assistant professor in the Department of Educational Psychology and Special Education at Georgia State University. Marie was surprised how few Georgia teachers knew about DI. There were only two school systems using DI and only with the special education population. Marie began working with Kimberly Vining, the area's SRA representative, to educate teachers about the gains in student achievement possible with DI. "From our very first meeting and continuing today," Kim Vining says, "Dr. Keel has been on a quest for teachers to understand the power and success within their reach when they use Direct Instruction. She has done and said the things that I have wanted to do and say, but have not been in the position to do so." At Georgia State University, Marie instructs the next generation of educators in effective school practices. Over the last four years, she and colleague Dr. Laura Fredrick also have monitored pilot DI programs in schools in Atlanta and Decatur, Georgia. The success of these programs has generated great interest from other schools and requests for their assistance in adoption of DI.

Marie has also acted as consultant and trainer for SRA. She's presented workshops and conducted training sessions throughout Georgia and in Alabama, Mississippi, Tennessee, Indiana, and New York. She spends a great deal of time in classrooms with teachers and has an extensive library of DI materials she is happy to lend to anyone interested. In addition to those two districts using DI with their special education students when Marie first arrived in Georgia, there are now over 60 counties using DI with regular and special education students in Georgia and throughout the southeast.

Excellent Special Services Program

The Cayuga-Onondaga BOCES (Board of Cooperative Educational Services) in Auburn, New York serves over 400 students in forty-five special education classrooms in nine school districts. The common element in all these classrooms is Direct Instruction.

C. Albert Sabin's first priority when hired as Director of Special Education fourteen years ago was to evaluate the effectiveness of all programs in use. That review indicated that DI was the most powerful instructional practice to support literacy. His second priority was to select an Assistant Director who could provide a vision of systematic instruction and staff development that would accommodate the learning challenges presented by students with a wide range of learning disabilities. Paul McKinney's passion for effective instruction infected

the rest of the staff who adopted his belief that all students can learn. As Assistant Director, he implemented DI reading, math and language programs and provided ongoing teacher training and supervision. The commitment to student achievement continued when Fred Bragan took over as Assistant Director in 1988. From its initial year of implementation using DISTAR Reading, math and language, Cayuga-Onondaga BOCES has refined and expanded all of its curricula to include the full repertoire of DI programs. Part of this commitment to DI has been in the areas of staff development and teacher mentoring. As teacher Karin Komins says, "Through frequent, nonjudgmental visits by administrators and my teacher trainer, and the opportunity to visit other classrooms, I have been able to learn how to present material to my students so that they benefit the greatest from my instruction." Cayuga-Onondaga BOCES frequently conducts internal and external evaluations of student and program success.



Group from Cayuga-Onondaga BOCES
Auburn, New York

The collaboration necessary to maintain and expand the Special Education program at Cayuga-Onondaga BOCES over fourteen years has required the commitment of all involved. "Our program has been successful," Al Sabin says, "because a Board of Education listened to teachers and empowered their request for mentors; because a superintendent looked at results, not rhetoric; because teachers truly believe their role is to teach everyone; because parents

have joined with us to encourage reading beyond the school house walls; and because—maybe I can share a small amount of responsibility—I recruit the best and most committed group of teachers ever."

Excellent School Award

Gunnison Valley Elementary School is the first school to receive the ADI Excellent School Award. GVES is one of three schools participating in the Accelerated Student Achievement Project (ASAP), a joint effort of the Utah State Office of Education, 3 Utah School Districts, Utah State University and the University of Oregon. It is a five-year project (now in its fourth year) in which every aspect of instruction—curriculum, staff development, supervision, etc.—is supervised by the project's coordinators. As part of the ASAP, GVES was completely reorganized and the staff were all trained on correct DI procedures and implementation. One parent says GVES has always been a good school. "However, the ASAP is a much better program for our children. Our children who are in GVES now are grasping basic concepts sooner and easier and it stays with them." For example, nearly half of kindergarten students are reading in a second grade book. The US History text used by the fifth and sixth graders is intended for high school students. In fact, most students are working in math, spelling and language books at least one year beyond their grade levels. Elizabeth Jensen, who was instrumental in the implementation of ASAP, says these accomplishments will compel the high school to make big adjustments in their course offerings.

Because they're learning at an accelerated rate, the students at GVES feel smart and successful and they enjoy telling others about their school experiences. More perfect attendance certificates are being passed out each year and over half of the students have missed fewer than three days the entire year. Principal Rodney Anderson says the program has accelerated learning for all students. Gunnison Valley is a school of 627 success stories. (For more information on Gunnison Valley Elementary, see "Utah Schools need Solutions, not 'Holy Wars,'" page 23.)

-Jocelyn Warren

DIRECT INSTRUCTION TEACHERS

As you use DI,

they get smart.

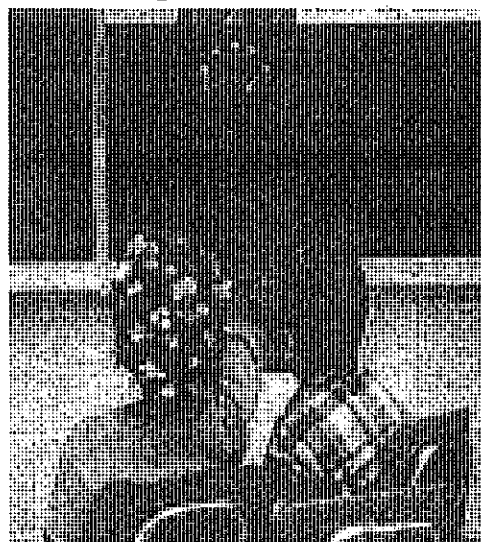


Photo by Larry C. Price, courtesy of The Sun



In Baltimore our children are getting smarter every day. We need talented, dedicated people to teach them using DI.

Our teachers and principals have chosen DI as the best strategy to bring our students to or above grade level. Every day, we challenge the low expectations too many people have for children in the inner city.

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Join us in showing what DI can do in urban schools.

Letters

The following messages were posted on the Internet Listserver (public discussion group) EDUCATION CONSUMERS CLEARINGHOUSE (professor@tricon.net)



Hello everyone:

I've been sending my K-8 school's principal information on Direct Instruction, some of the postings (such as Raspberry's column, and Bonnie's answer) to her. Although she has nothing against DI, per se, here is her assessment:

"The word I have from people who develop and research DI is that it's great for kids with memory problems, LD, etc. After all, that's who it's designed to serve and will "do no harm" to the rest of the kids. The caution here is that it is not enough to meet the needs of all kids." She also wants to look at Connecting Math Concepts curriculum, and is planning on calling the University of Oregon for that.

We have over 10% special ed kids at our elementary school, who are getting direct instruction programs now, she says. (I don't know which ones...)

I'd appreciate it if anyone has a response to her assertion that DI is really only for LD kids, and doesn't meet the needs of other kids. That isn't true, is it??? Any information that you can send, I will forward to her. My understanding (after Project Follow Through) was that DI programs increased the performance of all ranges of abilities in students, and more so than constructivist-type programs. Am I in error on this??

Thanks for any help you can give.

Diane Carey



In Response:

I too, once wondered what DI could do for regular and high performing kids. I had used it mostly with kids having trouble. As a third grade teacher, I found that the Reasoning and Writing program and the Connecting math Concepts program greatly enhanced the high performing kids. I have test scores to demonstrate this. In Reading, the Reading Mastery greatly strengthened the low and middle kids, but I wasn't sure of the high kids. I was not able to work as closely with these kids as I wanted to.

Now, as a 1st grade teacher, I am able to see what DI reading can do with all the kids. I have three groups. None of the kids could read at the beginning of the year, but some had better pre-reading skills i.e. Alphabet sounds, some knowledge of words, etc. The top group used the Fast-Cycle program which covers the first and second grade programs. This group is on schedule to finish this program by the end of the year. From the little bit of testing that I've done with them, they ought to average about the 3.0 grade level on the Stanford test at the end of the year. This group did not include any students that might be considered TAG.

The middle group has used the regular Reading Master I and II program but skipped or doubled up lessons whenever possible. They are on track to finishing half the second grade program. I think they will score about a 2.5 on the test.

Response Continued:



I have four in the lower group. They should finish the RM I program, but I don't know what to expect from them on a standardized test. These tests do not test a lot of the skills taught in the RM I program i.e., mostly decodable words. Two of these kids really are in between the lower group and the middle group. We'll see.

My point here is, I think the two top groups benefited more, or as much, from the DI reading program than the lower group. We expect that the high group should be reading 4th grade books by the end of second grade, the middle group should be able to read beginning 4th grade books and the lower group should be on grade level. The lower group's skills don't begin to show up on the standardized tests until the middle of the second grade program.

The Math and Reasoning and Writing program greatly accelerate all levels so far as I can tell so far. I'll know for sure at the end of the year. It is my experience that anything taught directly and sequentially will get better results than not. The question then is, how well the program is put together.

For what its worth.

Chuck

Another Response:



I used DI with special students for 12 of the first 18 years of my career. During that time, I was teaching LD, ADD, EMR, hearing impaired, and ED students at the elementary and secondary levels. I later took post-graduate work in mathematics to earn certification in that discipline, and I have been teaching "normal," above average, and highly gifted 8th grade students Algebra I and Honors Algebra I for the past 9 years.

The results have been extraordinary. Whereas my handicapped students made 3 to 4 year academic gains in the year they spent with me, my talented and gifted students become state and national mathematics champions. My current students of all ability levels achieve more than they ever dreamed they could. They do not find the repetition boring, they love my class, vote it their favorite every year, and often become upset when the bell rings and they know it's time to leave. They say time passes quickly in my class because they are completely engaged, and many have suggested lengthening the class just because it is so much fun.

There is no "scripted" Algebra I program that I know of, but I used "Corrective Reading" for so many years that the "technique" has become ingrained in me, and I easily write my own script as I go along, using a traditional algebra text.

Carol Gambill

For information on ADI's free E-mail discussion and announcement groups, see the inside back cover of this issue!

President's Message

Some weeks ago, Steve and I met with representatives of CLOUT, an organization of religious congregations and neighborhood groups. At that meeting, CLOUT members asked us if we would be willing to keep an open mind and visit some schools that are using Direct Instruction. We agreed to do so, although I must say I was somewhat skeptical of the whole notion. I agreed because it seemed to me that we truly want to do the best for children, then as educators we must be willing to explore any and all methods of instruction. In addition, I knew some of our members feel strongly that Direct Instruction is right for their students.

On Monday, October 27, 1997, Steve and I visited two elementary schools in Broward, County Florida. I would like to share with you what we observed that day. Both elementary schools were large, over 1000 students each. The faculties of both schools had voted by more than 70% to try Direct Instruction. Both schools were over 90% free and reduced lunch. Both schools were almost entirely African-American. The schools had active family involvement. The schools both experienced about a 45% turnover. Both schools expressed that their students bring to school all of the societal problems attributable to poverty. Both schools had a low number of ECE units in their buildings. Prior to the introduction of Direct Instruction, both schools were at or near the bottom on Florida's scale for measuring its schools. One of the schools is now at the top of that scale and the other is only one step from the top. Steve and I were allowed to move around freely from classroom to classroom. We talked to numerous teachers, administrators, parents, assistants and students. We found the student behavior to be EXCELLENT. While the success of these two elementary schools may not be totally attributable to Direct Instruction, I believe that their success story needs to be studied to determine the effect of the implementation of Direct Instruction. I left those schools on Monday, October 27th, extremely impressed. I know that our District Administrator has been negative about CLOUT and their push for piloting Direct Instruction. After my visit, I believe that if we have any elementary schools that vote by 70% to try Direct Instruction, JCPS should provide the needed resources to allow that to happen.

—Laura Kirchner

No Excuses: Houston Educator Thaddeus Lott Puts Failing Schools to Shame

Tyce Palmaffy

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Gayle Fallon wanted to give her 10-year-old godson a measure of stability in life. With a father who had compiled a long record of felony convictions and a mother imprisoned for shoplifting after two prior convictions for drug possession, the boy had shuffled in and out of foster care since birth. To worsen matters, he was languishing in the chaotic environment of a dismal urban school. Fallon, the president of the Houston Federation of Teachers, knew that without a decent education, her godson might stumble along the same destructive path his parents had followed. So in 1994 she secured him a spot at Mabel B. Wesley Elementary, an innovative public charter school on the outskirts of Houston.

We have come to expect mediocrity from schools whose students are saddled with such tragic circumstances. But since Thaddeus Lott became its principal in 1975, Wesley has graduated thousands of children whose reading and math scores rival those of their suburban peers.

"I love that program," Fallon says. "I wouldn't invest my godson in it if I didn't."

Fallon's praise evokes a sun-dappled public school set against a leafy suburban backdrop. And so would Wesley's manicured lawn, pristine brick facade, and buffed floors—if you ignored the barbed-wire fencing and boarded-up houses encircling the school. In fact, Wesley Elementary serves the violent, drug-infested Acres Homes section of Houston. All of its students qualify for federal Title I education funds earmarked for disadvantaged children, and its student body is 99 percent minority (93 percent black, 6 percent Hispanic). The lives of many closely mirror that of Fallon's godson.

We have come to expect mediocrity from schools whose students are saddled with such tragic circumstances. But since Thaddeus Lott became its

principal in 1975, Wesley has graduated thousands of children whose reading and math scores rival those of their suburban peers. Before Lott introduced his educational philosophy, only 18 percent of Wesley's third-graders were scoring at or above grade level in reading comprehension on the Iowa Test of Basic Skills. By 1980, 85 percent were achieving at or above grade level. In 1996, 100 percent of Wesley's third-graders passed the Texas Assessment of Academic Skills (TAAS) in reading. Statewide, fewer than 70 percent of third-graders in schools with similar demographics passed.

"It's a myth," says Lott, "that if you're born in a poor community and your skin is a certain color that you can't achieve on a higher level."

To achieve this astounding turnaround, Lott eschewed popular nostrums—computers, school-to-work initiatives, parental involvement—for the basics: a proven curriculum, rigorous teacher training, strict discipline, high expectations of teachers and students, and a fervent belief that any child can learn.

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Having succeeded at Wesley, Lott wanted to vindicate his beliefs at other troubled schools. In this desire the community saw an opportunity to have every Acres Homes child schooled by Lott. So its residents petitioned the Houston school board to allow Lott to manage Wesley and three neighboring schools as a separate district of charter schools. The contract was signed in spring 1995, making Lott's district the first charter-school arrangement of its kind in Texas, predating even the state law encouraging communities to establish charter schools. The charter's goal: To have 70 percent of all children who have spent three years in the charter system scoring at or above grade level.

The charter gives Lott total freedom to train staff, develop a curriculum, and make hiring, firing, and promotion decisions at the four schools. The charter "allows us to feel like we're not committing a crime by doing things differently," says Lott. "It does not release us from accountability, though. We have a three-year contract, and the community expects results." As the equivalent of a district superintendent, Lott reports directly to the superintendent of Houston schools, enabling him to sidestep several layers of bureaucracy.

Only \$2,500 Per Child

It is 8 a.m. at Wesley, and Mary O'Connor's third-graders are in a hurry. They are leaving on a field trip at 9, and there's plenty of learning to do before then. Not a moment is wasted as they correct their math homework, recite vocabulary lists, and read from a novel, Laura Ingalls Wilder's *Little House on the Prairie*. By 9 a.m., they have accomplished more than many classes do all morning.

This is the typical classroom at Wesley: The pace is quick, the goals are set high, and no disruptions are tolerated. "We have a lot of ground to cover," says Lott. "The success of these kids depends on the percentage of time they are on task. We can't let one or two students disrupt the educational experience." The first lesson Wesley kids learn is how to walk through the halls quietly, single-file with hands folded. Fighting is forbidden.

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high, and no disruptions are tolerated.**

The pace is rooted in the curriculum. Upon entering Wesley as principal, Lott purchased the Direct Instructional System for Teaching and Remediation (DISTAR), a program developed at the University of Illinois during the 1960s. Known now as Reading Mastery and Connecting Math Concepts, it is based on the direct-instruction model of teaching, in which students and teachers engage in a lively, interactive regimen of structured drills and sequential lessons, each building on the last. DISTAR's phonics-based reading lessons are literally scripted for the teacher, who is required to ask 200-300 questions per day, often in rapid-fire sequence. The children's high-decibel choral responses may sound like a high-school cheerleading squad hopped up on No-Doz, but they are learning the relationships between the

sounds and the letters that constitute the English language. And there's no quibbling with the results at Wesley.

During Lyndon Johnson's "War on Poverty," the federal government began Project Follow Through, which spent \$500 million and many years investigating the most effective pedagogy for disadvantaged students. It concluded that direct instruction was the only method that even came close to elevating poor readers to the 50th percentile in achievement. Child-centered approaches that diminish the teacher's role in the classroom and reject the teaching of basic skills finished in the cellar. Ironically, researchers also found that direct instruction elevated students' self-esteem far more than the child-centered methods that ascribe a central role to high self-esteem and maintain that self-esteem suffers in heavily controlled, teacher-directed environments. Disadvantaged students succeed more often with direct instruction, however, and Lott knows that achievement builds self-esteem, not the other way around.

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Direct instruction works so well that Lott steers just 3 percent of Wesley students into special-education classes. By comparison, 10 percent of all Houston schoolchildren are labeled special ed.

Houston schools can mask poor achievement by inflating their special-ed ranks because special-education children do not count toward a school's average TAAS scores. Lott refuses to engage in such subterfuge. By exempting only 3 percent of its students for special ed, Wesley's TAAS scores represent more than 90 percent of the student body (a small percentage of Hispanic children are exempted for taking the test in Spanish). Only five of 242 other Houston schools test more children; most test well below 70 percent.

"Other principals hire remedial teachers," says Phyllis Hunter, manager of reading instruction for the Houston school district. "Thaddeus hires teachers who keep kids out of remedial classes." In fact, Wesley retains just one special-ed teacher, which

helps to trim its costs to an average of \$2,500 per child—nearly \$1,000 less than the district average. "We've always done more with less," boasts Lott.

Lott held to his faith in basic skills while his counterparts swooned over the now-discredited "whole-language" theory of reading, which disavows explicit phonics instruction and views teachers more as "learning facilitators" than instructors. "People started teaching without ever giving kids any decoding skills," Lott says. "They gave them a bunch of books and said, 'Read.' That was the fallacy of the whole-language bandwagon."

So many educators jumped on this bandwagon that Lott, in the pre-charter era, had to run candy sales and forgo technology upgrades to purchase DISTAR because it was not on the state's list of approved curricula. Now the charter allows him to spend his precious curriculum dollars on whichever program he deems best.

Holding Teachers Accountable

In fact, Lott defies convention at every turn. Tracking—the practice of grouping students by skill level—has been accused of pigeonholing students into rigid categories. The first action Lott took as principal was to test his students, rank them by instructional level, and place the top 22 students in one class, the next 22 in another, and so on. The students in each class comprise, at most, three skill levels, making it easier for teachers to tailor their lesson plans to the individual needs of their students.

Few school districts rate teachers based on performance, yet Lott demands accountability.

"If you don't teach a child on his instructional level," Lott says, "you will teach him at his frustration level. A child's self-esteem and success at learning are determined by his having an opportunity to be taught at the rate and level that he is capable of being taught."

Moreover, few school districts rate teachers based on performance, yet Lott demands accountability. Early in his career he began testing children at the beginning and end of each school year. By breaking the scores down by classroom, he knows which teachers are succeeding. His personnel decisions and merit bonuses are based on the results. Often he will even post the average student scores achieved by each teacher. "Now that's peer pressure," says Karen Anastasio, a reading specialist at Wesley.

Teachers are also subject to unscheduled visits from Lott and current Wesley principal Suzie Rimes, who checks on each classroom at least once a day. On one of the days I spent at Wesley, Rimes found a teacher who had not checked her students' homework. "She's got a short-lived existence here," Rimes said. "If she can find a place to pay her to do what she wants to do, more power to her." New teachers, in particular, can expect to be observed two to three times a day.

"New teachers don't come equipped to teach" upon graduation from education schools, says Lott. "So we have a lot of training focused on teaching teachers how to teach. They get so little field practice in college."

Underlying these policies is Lott's conviction that if a child does not learn, it is the teacher's fault. "I'm in the education business," says Osborne Elementary principal Ann Davis, another of the Lott disciples in charge of the four charter schools under his management. "If I'm not doing my job, I need to be put out of business."

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These lofty expectations would merely provoke resentment among teachers if Lott did not equip them with proven strategies. New teachers attend several days of training before school begins, and Lott will release them from classes for a week to observe an experienced teacher if they need to. "Teachers need to be trained," Lott insists. "They need to know that they are supported." The school year is replete with opportunities for further training and time to share strategies with colleagues. "You can't as a teacher fail at Wesley unless you don't want to do the program," says Gayle Fallon, the head of the teachers union.

But Fallon warns prospective teachers that if they want to interpret their contracts literally, Wesley is not the place for them. "I tell them, 'You're going to work through lunch, past 5 p.m., and on Saturdays. But you're also going to get disciplinary support, the materials you need, and all the training you require,'" Fallon says. Wesley typically loses four to six teachers at the beginning of each year because

they dislike the program or fail to meet Lott's standards of competence.

The workload is heavy because students must be graded in five subjects each day. And a linchpin of direct instruction is that students are tested often to ensure they have mastered the material before moving on. These measures enable teachers to give students feedback on their mistakes. It's no use, Lott says, to have kids practicing bad habits. Or to have them turning the page without having learned the previous lesson. But it also makes the job of teaching that much harder.

The demanding hours and pressure to perform take their toll. The majority of Wesley teachers have fewer than five years of teaching experience, while the average Houston teacher has spent 12 years in the same school. According to Lott, the problem is competition: "We're surrounded by plenty of less rigorous schools that love to take the teachers we've already trained." Several observers say this is integral to Lott's success: He trains young teachers his way before they become entrenched in another philosophy.

Franchising Success

In terms of education policy, the key question is: Can the Wesley way become a model for widespread education reform? Can Lott succeed without devoting the amount of time to each of his four charter schools that he has always given to Wesley? Which is indispensable, the visionary leader or the approach he has championed?

It's too early to render a verdict on the charter experiment, but the initial signs are promising. Lott's first step at Highland Heights was to replace the principal (a power the charter gives him) with Sandra Cornelius, a former Wesley assistant principal. "The last principal was a joke," says Lott. "The place was a mess, and she wouldn't even show up on time." Cornelius shares his philosophy, and she began by beautifying the school, imposing a sense of order, and adopting the direct-instruction programs.

The results have been remarkable. In 1994-95, the year before Lott assumed responsibility for Highland Heights (where 94 percent of students receive free or reduced-price lunches), 37 percent of its fourth graders had passed the TAAS in reading. Last spring, a whopping 100 percent passed. In math, 94 percent of the school's fourth graders passed the TAAS this year. Two years ago, the passage rate was 30 percent among fourth graders.

Osborne Elementary, the third elementary school now under Lott's management, has been improving steadily ever since Davis was hired as principal in

1993, several years before Lott took over. Fewer than 40 percent of its students had passed the TAAS in reading and math in 1993. Nowadays, more than 80 percent pass. Instead of DISTAR, Davis has chosen to use Success For All, a teaching model developed at Johns Hopkins University that incorporates direct-instruction techniques. Lott, for the most part, has left well enough alone. "All of [the principals] are free to do their own thing as long as they get results," Lott says.

Lott's most daunting challenge is to revamp M.C. Williams, the lone middle school (grades six through eight) in his care. He spent the first year of the charter battling the old principal, who disagreed with Lott philosophically and has since been replaced. This year the school has a new principal and a new look. Formerly dark hallways now have fluorescent lighting; a once perpetually dirty floor is swept and waxed daily; graffiti is cleaned up immediately; and new principal Roy Morgan himself donned an old sweatshirt one Saturday and painted the front doors bright blue.

The most important lessons, however, have yet to be learned. Lott's direct-instruction programs are still not a part of Texas's approved curriculum; schools that want to use the programs must either gain charter status or use precious discretionary funds to buy the textbooks.

Morgan is a constant presence in the hallways and classrooms, and teachers are assigned posts at high-traffic areas during breaks. Their mission: Maintain order. "The teachers and administrators have finally gotten control," says assistant principal Sylvia Jones. These initial renovations are revealing, for they reflect Lott's priorities. Before attending to academics, Lott says, you must create an environment for learning. That means a clean school with cheery colors, a staff of professionals who treat students with respect, and students who understand what type of behavior is expected of them.

Test scores, however, have only seen minor improvements. Besides the turnover in leadership and the wasted year with an ineffective principal, Williams suffers from a more serious problem: Cherry-picking. Wesley graduates are technically zoned to attend Williams, but few actually enter. Most are accepted by magnet schools throughout Houston or

wooded by private schools seeking high-achieving minority students. So Williams is left with hundreds of graduates of other local elementary schools starting well below grade level.

Lott's solution is to bring textbooks from Wesley into the middle school. "These kids don't know how to decode a word," he says. "Now we're having to do what the elementary schools didn't do." The charter arrangement exempts Williams from regulations forbidding the use of below-level textbooks.

A Failure To Replicate

Lott's devotion springs from his deep roots in the community. His boyhood home stands just five blocks from Wesley, and as a child he attended Highland Heights. Back then Acres Homes was largely rural; his parents raised livestock and pumped water from a well. It was a different kind of community, too. "There were more families and they looked out for each other's children," Lott laments. "My neighbor was as much a guardian as my parents. Now we have drugs, violence, babies having babies—the whole nine yards."

Soon after graduating from Texas Southern University and becoming an educator, Lott and his wife built a home near Wesley. "I wanted my children to know their heritage," Lott says. "I wanted them to sit in their grandmother's rocking chair."

Even though Lott was told that he would never recoup the house's full value, it was important to him that Acres Homes kids hold high aspirations. "Children would pass the house and admire it," Lott says, "and say, 'You can come from Acres Homes and make a difference in the world.'"

But living in Acres Homes meant his children had to attend Wesley. Finding the education lacking, he sent them to private school and vowed to take the job as principal at Wesley if it ever opened. "I knew what it was like to be a parent looking for a school that taught my kids as well as I was taught," Lott says. "For them to do less is criminal."

Opportunity knocked in 1975, and the swift and dramatic improvements at Wesley soon attracted notice. In 1980, the school district conducted a study of Wesley and 10 other schools with similar demographics. It attributed the sudden uptick in Wesley's scores to the use of DISTAR.

With these results in hand and a supportive superintendent, more than 300 Texas schools adopted DISTAR in the early 1980s. But since DISTAR had still not been approved by the state education board, public schools had to divert discretionary funds away from other endeavors to afford the program. When classroom computers became the latest rage,

these schools largely abandoned DISTAR to purchase computer hardware.

The next superintendent, Joan Raymond, was an ardent whole-language acolyte. Lott's philosophy was anathema to her, and, according to Gayle Fallon, his success prompted many Houston school district administrators to question the validity of Wesley's scores. "They assumed that if minority kids were doing well on tests, they had to be cheating," Lott says. The district sent a pair of investigators into the school to look for evidence of foul play, but they came away empty-handed.

The baseless charges provoked an indignant backlash. "[Raymond] got to meet the entire Acres Homes community at the next school board meeting," says Fallon, smiling. The pivotal moment came when ABC's PrimeTime Live broadcast scenes of Lott's children reading two and three years above grade level. Raymond squirmed as reporter Chris Wallace questioned the district's lack of support for Lott and her own prejudices. It had all the elements of a juicy story—a crusading hero, an intransigent bureaucracy, and children's education in the balance—and ABC ran it twice. Ultimately, it gave Lott an aura of invincibility and forced Raymond out of office.

The resistance to adopting direct instruction is an apt metaphor for the problems and promise of our decentralized system of public education.

It also brought a wave of requests from parents throughout the city desperate to enroll their children at Wesley. Some resorted to lying about where their children lived, providing the address of a vacant lot or of a relative within Lott's district. While most schools take pains to expose such fraud, Lott does not. If they want to come and don't cause any trouble, he is glad to educate them.

Now Lott has a supportive superintendent in Rod Paige (the two are good friends) along with an adoring community and a national reputation. When Paige impaneled a blue-ribbon commission to settle the reading-instruction debate in Houston, Lott was one of the experts called to serve. The charter-school arrangement sprung from Paige's desire to "create an environment in which a renegade principal like Lott could flourish," he says. Observers visit Wesley from across the country. And despite the pressures Lott places on his teachers, even the national office

of the American Federation of Teachers (AFT) has published approving stories on direct instruction and Wesley in its journal *American Teacher*.

The most important lessons, however, have yet to be learned. Lott's direct-instruction programs are still not a part of Texas's approved curriculum; schools that want to use the programs must either gain charter status or use precious discretionary funds to buy the textbooks. The Houston Livestock Show and Rodeo is contributing \$4.4 million over the next three years to bring Reading Mastery (formerly DISTAR) into six low-performing Houston schools, but the school district has made little effort to find out what makes Lott's program work and encourage other schools to follow it.

The district's policy of benign neglect toward a man like Thaddeus Lott may allow him to "flourish," in Paige's words, but education reform demands replicable models for improving entire districts, not just a tiny subset of schools.

The resistance to adopting direct instruction is an apt metaphor for the problems and promise of our decentralized system of public education. Current thought in education circles emphasizes "child-centered" classrooms and collaborative learning groups, values the learning "process" over correct answers, and disavows the teaching of basic skills in math and reading (although phonics has experienced a resurgence as of late). These trends place control over curriculum content largely in teachers' hands.

Direct-instruction programs do the opposite. Their scripted lessons leave the teacher with little freedom, although Wesley teachers say that having ready-made lesson plans leaves them more time to develop creative supplements. In direct instruction, the teacher runs the classroom and the students focus initially on acquiring basic skills; the primary goal is measurable student achievement. How much a teacher likes the program is of little concern. Most teachers blanch at having their instructional methods dictated so heavily by the curriculum.

Moreover, longstanding traditions of local control in education prevent any superintendent from imposing a curriculum like direct instruction on an entire district. Although that means not everyone will adopt misguided reforms (as happened in California when the state education board mandated whole language statewide and repealed it several

years later after a fierce public outcry), it also means not everyone will adopt the right ones. Lott has the pleasure of managing only four schools whose principals were either trained by him or believe in his approach. Imagine attempting to impose a curriculum on 242 Houston principals and their staff, all of whom possess their own educational philosophies.

The failure to replicate Lott's program reveals another vexing matter in education: Hero worship. Whether it's Thaddeus Lott, Joe Clark of New Jersey, or Jaime Escalante of California, the latter two made famous by popular Hollywood films, when we elevate educators to the height of myth we place their achievements seemingly beyond reach. For example, when asked why the school district had not tried to replicate direct instruction in other schools, Paige answered, "The error in your premise is that it's the methodology that makes [Lott] succeed. If I had to choose any single foundation of his success, it is his intense desire to cause children to learn."

It's a measure of how low our expectations in education have sunk when a sense of mystique surrounds a man who brought in common-sense reforms such as choosing a research-based curriculum, measuring teacher performance, conducting an on-going effort to train those teachers, and expecting children to master subjects before moving on.

Yet Thaddeus Lott spends most of his day in meetings. Although he should be applauded for ensuring that teachers have a well-designed curriculum and the training they need, they ultimately bear the responsibility for whether the children learn. "That's what bothers me," Lott says, "the people who say you need to have a Thaddeus Lott to change things. No, you don't."

To prove that there's nothing unique about direct instruction, Paige's office provided TAAS scores from 22 Houston schools with demographics and achievement levels comparable to Wesley's, only a few of which use direct instruction. The office neglected to supply—until asked—a list including the percentage of children in each school who actually took the test.

Of the 22 schools, only two tested more than 70

percent of their kids—and one of the two was Highland Heights, which uses direct instruction. Ten of the 22 actually tested less than 50 percent of their students. No schools had tested more than 80 percent of their students, while Wesley tested 93 percent. Lott does not need to hide low-performing students to prove that direct instruction works.

To be sure, Houston has made great strides in the area of reading—the blue-ribbon committee overhauled the district's curriculum to include a focus on early systematic phonics, and TAAS passage rates are way up under Paige's watch. The school district's accountability system, in which each school is given a grade for its TAAS passage rate, has forced principals to show marked improvement or risk losing their jobs. But schools are also exempting more and more of their students from the TAAS by labeling them special education or giving them the test in Spanish.

The district's policy of benign neglect toward a man like Thaddeus Lott may allow him to "flourish," in Paige's words, but education reform demands replicable models for improving entire districts, not just a tiny subset of schools. Lott's success with direct instruction, and even Davis's record with Success For All, suggest effective reforms. "Direct instruction will certainly give us a lot more success than we have right now," says Lovely Billups, the director of field services for educational issues at the AFT.

It's a measure of how low our expectations in education have sunk when a sense of mystique surrounds a man who brought in common-sense reforms such as choosing a research-based curriculum, measuring teacher performance, conducting an on-going effort to train those teachers, and expecting children to master subjects before moving on. Should we really expect anything less? ♦

Myths and Truths About Direct Instruction

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Myths are beliefs that permeate people's thinking to such an extent that they are generally accepted as truths even though they are not supported by reliable evidence. Although we tend to think of myths as legendary stories handed down from the distant past, strong but unsupportable beliefs of more recent origin can be detected within the field of education. Some of those beliefs or myths can, and I believe have, serve(d) to perpetuate the widespread use of ineffective educational practices and to limit the adoption of effective practices. The Direct Instruction (DI) approach developed by Siegfried Engelmann and his colleagues is a prime example of effective instruction that has been used too little because of such myths.

In 1996, Hugh Downs of ABC-TV began a 20/20 story on DI with these words:

What if somebody could come up with a method of teaching children how to read that was simple and worked every time. That sounds like the impossible dream to parents and school kids. But we found such a method. And you may be shocked to find out that most schools refuse to try it.

Although we tend to think of myths as legendary stories handed down from the distant past, strong but unsupportable beliefs of more recent origin can be detected within the field of education.

Many who have witnessed the effectiveness of the DI programs have been shocked by the educational establishment's rejection of the approach. That rejection, at least in part, has been based on a number of persistent beliefs that are inconsistent with the growing body of empirical evidence in support of DI. Some of these myths are summarized briefly in this article. Empirically-based truths that correspond to the myths about DI are included, also, in an attempt to provide a more accurate picture of what DI is and to refute some of the myths about DI. For more detailed discussions of DI, myths about DI, and research that refutes those myths and documents the claims stated as truths in this article, the

reader is referred to Adams and Engelmann (1996), Ellis and Fouts (1997), Carnine (1992; 1994), and Tarver (1995). The Adams and Engelmann (1996) book provides comprehensive coverage of studies on DI as well as a complete listing of DI programs.

Myth #1. DI may be effective at teaching very rudimentary academic skills, but it is not effective at teaching problem solving or promoting higher order cognitive learning.

Truth #1. DI is effective at teaching higher order content and problem solving, as well as basic academic skills and strategies.

DI programs differ from many traditional instructional programs in that they are designed to ensure that students first acquire a foundation of basic academic skills and strategies on which higher order learning can be built. Thus, the emphasis is on basic skills and strategies in the early levels of DI programs. The information and skills acquired in the early levels comes to constitute the student's body of "prior knowledge," without which the student would be unlikely to learn higher order content or acquire more complex problem solving strategies. To state it another way, direct teaching of prerequisite knowledge, skills, and strategies ensures that the student will be "ready" to learn higher order content by building on that basic foundation. Effective teaching of essential prerequisites eliminates the need to simply wait for the child to "emerge" or "get ready." To give just one example from the area of reading instruction: teaching phonemic awareness skills (e.g., rhyming, segmenting, blending) to kindergartners gets them "ready" to learn phonics (i.e., letter/sound correspondences). Mastery of letter-sound correspondences and a strategy for blending those sounds into words leads to "readiness" for word recognition. Automaticity in word recognition allows for "emergence" as a fluent reader of passages. The accurate and fluent decoder is likely to be a good comprehender if s(he) also has acquired a number of important reasoning skills and an adequate store of vocabulary knowledge.

Complex problem solving and reasoning skills are taught in nearly all of the DI programs (including language, reading, spelling, writing, mathematics, science and social studies programs) and are emphasized strongly in the upper levels of the two most widely-used DI reading and math basal se-

ries—*Reading Mastery I-VI* and *Connecting Math Concepts I-VI*—and the *Corrective Reading* program for students in grades four through adulthood. In addition, an emphasis on higher order learning and problem solving is evident in *Core Concepts in Mathematics and Science*, a series of math and science programs that employ the videodisc technology. Unfortunately, many educators who are unfamiliar with the design of DI programs have focused on the surface level features of the beginning levels of DI programs and, as a result, have drawn the mistaken conclusion that is reflected in Myth #1.

DI is effective at teaching higher order content and problem solving, as well as basic academic skills and strategies.

Myth #2. DI reading programs may be effective at teaching decoding and word recognition, but they are not effective at teaching reading comprehension.

Truth #2. DI reading programs have been used successfully to teach comprehension as well as decoding and word recognition.

Included among the reasoning skills taught in *Reading Mastery VI*, for example, are: distinguishing between relevant and irrelevant evidence; identifying contradictions; using deductive reasoning to draw conclusions; identifying logical fallacies; distinguishing between literal and inferential questions; and identifying cause and effect. Analogical and logical reasoning are emphasized throughout the *Corrective Reading* program.

DI reading programs have been used successfully to teach comprehension as well as decoding and word recognition.

Research evidence in support of DI's effectiveness at teaching word recognition skills and fluency of reading passages is irrefutable. Unfortunately, this strong support for DI decoding instruction has sometimes been interpreted erroneously as a lack of support for DI comprehension instruction. It is accurate to say that evidence of the effectiveness of DI comprehension instruction is not as extensive as that for DI decoding instruction. Nonetheless, the evidence supporting DI comprehension instruction is substantial.

DI is not a "rote" and "drill" approach. DI programs are designed to teach for generalization.

Myth #3. DI is a "rote" and "drill" approach to teaching.

Truth #3. DI is not a "rote" and "drill" approach. DI programs are designed to teach for generalization. As explained by Engelmann:

The Direct Instruction orientation toward acceleration implies that the effort must focus heavily on the teaching of generalizations, not rote learning. Generalizations represent efficiency, whereas rote learning represents inefficiency. For example, during 15 minutes the teacher may be able to teach students three rote items or one generalization. The generalization permits the students to respond to many items. The work on rote items, in contrast, produces performance on only the three items the teacher taught. Therefore, the teaching of the generalization is far more efficient than the teaching of the rote items.

DI has a positive effect on students' self concept or self esteem and fosters positive attitudes toward learning.

Myth #4. DI has a detrimental effect on students' self concept or self esteem and on attitudes toward learning.

Truth #4. DI has a positive effect on students' self concept or self esteem and fosters positive attitudes toward learning.

The positive academic achievement results obtained with DI programs have not been at the expense of students' affective learning and/or feelings of self esteem. Although relatively few studies have measured affective variables along with academic achievement variables, those few have reported positive effects on self concept and affective learning (e.g., data from Project Follow Through) and on attitudes toward learning. The evidence suggests that academic success in school promotes positive feelings of self worth.

Myth #5. DI may be appropriate for disadvantaged students, but it is not appropriate for other students who are at risk of failure in school and it is not appropriate for average and above-average achievers.

Truth #5. DI has been used successfully to teach a variety of low performers labeled as students with learning disabilities (LD), behavioral/emotional disabilities (B/ED), cognitive disabilities (CD), or other mildly handicapping disabilities and it has been used successfully to teach average and above-average students.

Because the first large-scale study to show the effectiveness of DI was with disadvantaged students (Project Follow Through in the late 1960's and 1970's), many have mistakenly assumed that DI benefits disadvantaged students only. This unsupported assumption persists despite the large number of studies that support DI's effectiveness with a variety of low-performing students with and without disabilities. In addition, a growing number of studies of recent date show that DI is at least as effective with average- and above-average achievers as it is with low-achievers.

DI has been used successfully to teach a variety of low performers labeled as students with learning disabilities (LD), behavioral/emotional disabilities (B/ED), cognitive disabilities (CD), or other mildly handicapping disabilities and it has been used successfully to teach average and above-average students.

Two reasons have been offered to explain perpetuation of the belief that DI may be appropriate for disadvantaged students and students with disabilities, but not for average students. First, teachers of low performers are more likely to try DI because, in most cases, an array of other approaches have been tried and were found to fail with the students they teach. Secondly, the prevailing instructional philosophies of regular education during the last decade or two—holism, constructivism, social constructivism—are inconsistent with the principles and practices of DI. Thus, regular educators have been inclined to simply turn their hard-to-teach students over to remedial and/or special educators rather than to change their own instructional practices. However, two trends of relatively recent origin seem to be interacting to produce greater interest in classroom-wide and school-wide implementations of DI. Those two trends are growing dissatisfaction with academic achievement of students in regular education and increasing emphasis on in-

clusion of students with mild disabilities in regular classrooms. Inclusion cannot work to benefit all students unless the instruction provided in inclusive settings is the kind of instruction that increases the academic achievement of the full range of students, including high achievers as well as average and below average achievers.

Myth #6. DI is not appropriate for students with dyslexia because it is not multisensory.

Truth #6. DI reading programs have been used successfully to teach students labeled as "dyslexic".

DI reading programs have been used successfully to teach students labeled as "dyslexic".

Although the developers of DI programs have not described their programs as "multisensory," it is clear that many of the instructional features which others have described as multisensory are characteristic of DI. Striking similarities are apparent, for example, in the phonics exercises in *Reading Mastery I* and the spelling book that is a part of that program. In a typical spelling exercise, the teacher pronounces a word (e.g., "map") and students are instructed to respond by performing one or more of the following tasks: segment the word into its component sounds, tell how many sounds in the word, spell the word orally, spell the word by writing the letters associated with the sound, read the word after having written it. To perform these tasks, the student must have processed the information through the visual, verbal (auditory) and kinesthetic modalities; furthermore, successful completion of the tasks demonstrates that the student has mastered the visual, auditory, and kinesthetic associations. This type of spelling instruction, as well as the phonemic awareness and phonics instruction in *Reading Mastery I*, is much like the spelling and reading exercises specified in the original Orton-Gillingham multisensory method and a number of variations on that method. Although developers and advocates of those methods tend to attribute success to the multisensory feature of their methods, there is no educational research to support that claim. It seems likely that success with those methods might be more accurately attributed to the fact that they, like DI programs, emphasize explicit and systematic teaching of phonics.

Myth #7. DI may be appropriate for students in the early grades, but it is not appropriate for middle school students, high school students, and adults.

Truth #7. DI is appropriate for preschool, elementary, middle school, high school, and postsecondary students.

Although DI programs provide more complete coverage of subjects taught at the preschool and elementary levels, the somewhat limited numbers of DI programs which have been developed for older students and adults have been used successfully with those populations. Particularly noteworthy are the success of a *Core Concepts in Math and Science* series presented on videodiscs and the *Corrective Reading* program for students in grades four through adulthood.

DI is appropriate for preschool, elementary, middle school, high school, and postsecondary students.

Myth #8. The rigid structure of DI lessons fosters dependence on the teacher; students taught with DI are not capable of functioning successfully in independent learning situations.

Truth #8. DI progresses from structured teacher-directed lessons to less and less structured independent seatwork; it teaches students to apply independently what they have learned in teacher-directed lessons.

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DI programs are designed such that new concepts, skills, and strategies are presented in teacher-directed instruction. In mathematics instruction, for example, the teacher explains or models a problem solving strategy, leads the students through the strategy step by step, and then tests to see if the students can apply the strategy to one or more examples. The students then apply that strategy to a range of examples in independent work. In addition, students work in groups to identify real-world problems and apply the strategies they have learned to solve those problems. This progression from acquisition to application ensures that students can be successful in independent work and in

cooperative learning activities. Furthermore, because the student learns in teacher-directed instruction to detect and focus on the details that define a knowledge domain and to understand how those details are organized to form the whole, s(he) is in a position to "learn how to learn." Knowing how to learn is the essence of truly independent learning.

Myth #9. Although DI produces academic gains in the early grades, it has no lasting effects on students' success in school.

Truth #9. DI has positive lasting effects on students' success in school.

DI has positive lasting effects on students' success in school.

Follow-up studies of disadvantaged students who received DI in the early grades in Project Follow Through showed that disadvantaged students taught with DI dropped out of high school less often, applied to college more often, and were admitted to college more often than their disadvantaged peers who had not been taught with DI. Follow-up data from other DI projects in elementary schools indicate that disproportionately fewer of those students are referred to special education and disproportionately greater numbers go on to programs for the gifted.

Myth #10. DI's structure and scripted lessons stifle teachers' and students' creativity.

Truth #10. DI provides teachers and students with tools that will enable them to create and discover.

DI provides teachers and students with tools that will enable them to create and discover.

Although there is little research to enlighten the issue of how to teach creativity or discovery directly, the little that there is suggests that creative problem solving entails the application of or the reorganization of what one has already learned. In other words, creativity and discovery follow and are dependent upon the prior acquisition of prerequisite skills and knowledge (i.e. "prior knowledge").

It is not possible to create something new from nothing. Creations represent new ways of combining or organizing already-known elements. Discov-

eries are often based on the detection of sameness between something already understood and something that the discoverer seeks to understand. In the absence of a rich repertoire of knowledge and skills, the student is not in a position to create new ideas or to discover strategies that work.

When required to discover or create multiple strategies for solving a number problem, for example, students with inadequate prior knowledge of basic mathematical concepts often discover/create strategies that don't work across a range of problems. Not only do these flawed discoveries result in wrong answers on a given problem; they often result in more generalized "mislearnings" that interfere with higher learning and require a great deal of reteaching on the part of the teacher. This is not to say that discovery and creativity are not worthy goals. They are. It is to say that many so-called "discovery learning" approaches are unsuccessful because they fail to provide students with the tools they need to discover and create successfully. DI, in contrast, is designed to ensure that students understand prerequisite concepts and how those concepts are connected so that can discover successful applications of those understandings in independent and/or cooperative learning activities.

Like students, teachers must possess a repertoire of basic skills and knowledge so that they can apply that knowledge creatively to solve instructional problems as they arise in the classroom. The teachers' manuals for DI programs contain hundreds of "how to" tools that constitute a rich repertoire of teaching skills—how to group students for instructional purposes, pace lessons appropriately, keep students actively engaged throughout lessons, provide corrective feedback, record and monitor student progress. The teacher who has acquired these teaching skills is in a good position to apply that knowledge creatively to deliver the content of DI programs effectively.

It is no more reasonable to require the teacher to construct her own instructional programs than it is to require the musician to compose her own musical score or the actor to write his own script. The good musician seeks and welcomes good musical compositions; she applies her skills and creativity to interpret and perform the composition. The good actor seeks a good script; he applies his skill and creativity to interpret and perform the role portrayed in that script. The good teacher seeks and welcomes good teaching tools, including well-designed instructional programs; she applies her teaching skills and creativity to deliver those instructional programs effectively, to solve instructional problems when they arise, and to increase the academic achievement of all students. DI programs provide many of the tools that good teachers, in increasing numbers, are seeking in their efforts to improve the academic achievement of their students.

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Utah Schools Need Solutions, Not 'Holy Wars'

Stevan J. Kukic

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Is it more important to be right or for kids to learn?

As you are having success understanding the emerging ideas in this column, it is clear that you can read. How did you learn? For those of you who are about my age (49 or so), you probably learned by memorizing and understanding key "sight words."

Others of you learned to translate the written symbols (letter combinations) into sounds and then into meaning. Still others learned to read by engaging in literature-based activities including extensive writing.

Which method should be used in our schools today? This question is the basis of a "holy war" that has been waged in our classrooms, districts, state departments, the federal government and our universities. On the one side is the whole-language advocate. This perspective emphasizes the power of literature in getting meaning from the written word.

Whole language has been a defining force in our schools for more than a decade. Whole-language philosophers believe meaning can be derived directly from written symbols if they are viewed in context.

On the other side of this war are the advocates of phonetic decoding as a prelude to involvement with literature. This perspective promotes the idea that children will construct meaning from letters and words only if they can translate those symbols into sounds first. Internally children can use this translation to construct meaning. Anyway, the war in reading is between those perspectives. Meanwhile, reading achievement scores continue to grow at a rate unacceptable to parents and educators.

Three schools and a school district in Utah have initiatives that provide some answers.

Valley View, Gunnison Valley and Monroe Elementary schools are in the fourth year of a five-year research project. This project evaluates a very structured teaching strategy called "direct instruction." In these three schools, direct instruction is used across the curriculum for all grades.

This strategy requires teachers to use a script that details instructional cues for each lesson. The data are very clear. Students at these three schools achieve at unexpectedly high levels over an extended period of time. Young students read beyond their grade levels. Older students master complex content.

The experiment works, and that's a judgment based on the achievement data collected, not on someone's bias.

Last year, the Granite School District formed a reading task force to decide on a valid direction for reading instruction. This task force was the result of dedicated parents who were not pleased with the achievement of their children. The local school board directed the school district to organize the task force.

The group carefully studied the research on reading, and based on that research, a model for elementary reading instruction was developed. Materials were found to match it. Now the district is investing in materials, staff development and evaluation to ensure success.

In both cases, these initiatives have used best available research to improve achievement.

In both cases, the schools will monitor student achievement and decide what to do next.

I applaud both initiatives. Bias is not affecting decisions. Student achievement dictates what will be done. I know this sounds business-like and I know it seems obvious to those of you who must see results to continue pursuing your dream.

That both initiatives take a strong stand in favor of early instruction in phonetic decoding is not surprising. Thirty years of research proves that reading will improve for the most students in the shortest time if students master the ability to translate letters and words into sounds.

It is also not surprising that careful use of good literature is an important part of both initiatives. The data are clear. Good literature should be used in all classrooms.

Teachers should read to students until those students have the skill to read the stories and books themselves. In this way, children will learn invaluable comprehension strategies from the beginning of their school experience.

The aforementioned "holy war" was never necessary. Many fine, dedicated professionals on both sides have been hurt by venomous comments. We don't have time for such nonsense.

We only have time to give it the best shot we have based on the best research. Then, we must be willing to be held accountable to the achievement produced by our instruction. If it works, continue to use it. If it doesn't (read: if children don't learn), stop. Our futures are dependent on the success of our children. We don't have time for "holy wars."

Direct Instruction at Davenport School in Genoa, Illinois

David Ziffer

It is a gray but pleasant November day as I pull up and briefly enjoy the colors in the many trees surrounding Davenport Elementary School in Genoa, Illinois. There is nothing ostentatious about this school, a small one-story brick building with a flat roof. Looking at it from the front I have to wonder how many students it could possibly hold. I enter the school and am immediately flooded with memories of my own childhood. With its 1960s-style pale yellow cinder block walls and resilient tile floors, it could have been built in time for me to attend it during my own elementary school career.

Not being a professional educator I feel odd being in the presence of people who barely come up to my waist, so it is reassuring when I meet the adult I came to see. George Ziders is one of the instructors who uses Direct Instruction to teach the low-performing students at Davenport how to read. I had already spoken with George and the school's principal (Gary Gathman) by phone, and I had gotten the impression that they were very anxious to discuss their methods with me, as if they had stumbled onto something incredible but couldn't get anyone else, including others in their profession, to believe it.

George works in a large room with several tables where teachers work one-on-one with children who suffer from the most severe reading disorders. The boy at George's table is reading some text from a code-based reader that is obviously a part of the SRA Reading Mastery program. I can tell because of the distinctive *Distar*-style type face. The boy seems to be doing quite well, although this could not always have been the case because George sees only the most disabled of students. George points out a child working at another table with another instructor. He says that upon entry the child had been tested with an IQ of 60, and that George had been advised to attempt nothing more than to teach the child how to recognize basic safety words, like the "EXIT" on an exit sign. Not satisfied with this recommendation, George and his colleagues had somehow gotten this child to read at a third grade level with full comprehension.

But to really see Direct Instruction at work, George says, I will need to visit Alicia Ryley. Alicia handles the "Title I" children who are not seriously impaired but who nonetheless are the poorest readers

in their classes. So he walks me down the hall and deposits me into Alicia's second grade remedial reading class.

Alicia sits in a small room. Surrounding her are several small tables arranged in a semicircle so that the natural focus of each child's attention is Alicia. Beside her is a music stand upon which sits a *Reading Mastery* presentation book with its large, unique type. Her second graders are obviously taking a test. Each student's work area is enclosed in a large three-panel manila folder that looks like a modern cardboard voting booth. Obviously the intent is to keep them from copying each other's work. Alicia prompts them to keep working and finish up. The test is only one page long and so it is over quickly. She removes the folders and collects the tests.

"My turn," she says. She points to individual letters and makes their sounds. "Your turn, get ready," and she points to each letter as the children make the sounds. "My turn," she says. Now she sounds the entire word slowly. "Your turn, get ready," and the children repeat as she slides her pen across the letters. "Fast way," she says, and everyone says the word normally as she slides the pen quickly.

Now she chooses another word or set of letters and the process repeats. The pace is furious. The only letup comes when Alicia senses that one or more children are behind the others, and are repeating others' responses rather than formulating their own. She then determines whether they are having trouble or are simply distracted. In the former case she will single out an individual or a subgroup and work with them briefly. In the latter case she will simply instruct the entire class to work together and get their timing right.

After watching this for awhile I come to realize why principals report having no discipline problems when their teachers are using this program. There is just no way to become distracted for very long. The teacher is in total control and it is simply impossible not to be "on task." I cannot recall ever having seen a classroom where every student was so totally engaged.

"My turn," says Alicia. We are apparently going to sound out the word "is." "Ih," she says, sounding out the short "i." "Your turn, get ready," and the

class makes the sound as she touches beneath the letter. "My turn," and she sounds out a soft "s." I am puzzled. "Your turn, get ready," and the students repeat when she touches the "s." "My turn," and Alicia sounds out "is" with a soft "s" while dragging the pen. "Your turn, get ready," and the children say it. "How do we really say it?" "Is," says everyone, substituting the "z" sound for the soft "s."

Apparently *Reading Mastery* teaches the anomalies right alongside the phonetically regular words. I pause to wonder why this should work, but then I remember the documented results that this program produces and satisfy myself that there must be some merit to this approach. The pace continues and Alicia is already on the next word. It is almost exhausting. The repetition, alternation, and sheer speed of the stimuli and responses sets up an almost tangible atmosphere in the room, drawing everyone irresistibly into a whirlpool surrounding the teacher.

To break things up, Alicia arbitrarily divides the children into two groups. Then she prompts one group at a time, challenging each group to outperform the other. Then it's the kids on the left against the kids on the right. Next it's boys against girls. The grouping games heighten the alertness and reduce the possibility of boredom.

Now it's time for another game. Alicia pulls out a sheet of paper and a pencil. She's going to beat them this time, she admonishes. She explains to the kids that when they say it right they get a point, and when they say it wrong she gets a point. Once again she is firing away and the children are responding. Most of the time the kids do quite well and they get the points. Every once in a while they miss and Alicia gets a point. After a minute it is clear that Alicia is losing and she complains that they won't give her a chance. The children are apparently in no mood to display any mercy and they hammer away for another couple of minutes until it is clear that the teacher has lost. "You won!" she admits grudgingly.

Now the children open their readers, which contain only words that the children know how to decode. The rest of this brief class will consist of having the children read aloud individually from their books. Each child begins reading where the previous one left off. The children read with significantly different levels of confidence and some make significantly more errors than others. Alicia corrects every single error. She counts their errors and times each child with a stopwatch. Apparently she records the timing and error information on every student, presumably to determine how to help the slower ones. Despite the disparities it is clear that every child can read the text fairly well.

Suddenly the door opens and more children pile into the small room. Alicia finishes with the second graders and has them stand and recite a silly limerick and then they're off. The new group consists of third graders and they're busy checking in some of their "library" books. (Alicia maintains a small library of "authentic" children's books that she has classified according to skill level.) She uses the brief interlude to explain the differences in the reading skills of the children in the previous group. The children have different confidence levels because Alicia cannot do true skill grouping—the other teachers simply bring her their low-skilled readers on a class by class basis. For example, most of the readers in the previous group had entered the class with some reading ability, but one girl had come from a Spanish speaking family and could not read a single English word on her first day.

By now the third graders have piled into the chairs. This class is quite different: the kids spend most of their time reading from a blue third-level reader. Their book contains ordinary type (not the special *Distar* orthography) and consists mostly of stories. Here it is clearly assumed that the children have already mastered their decoding skills, and so the focus is on comprehension. Each child reads a paragraph or so as in the previous class, but this time Alicia stops and asks questions. Today's story is a non-fiction piece about American Indians and the types of canoes they built. It describes the making of both dugout and frame canoes and compares their advantages. Alicia asks the children questions about the just-read section, ensuring that each child (including the reader) has grasped the meaning of the text. Once again, despite the differences in the children's incoming ability levels, all are able to follow the material.

Although the focus has changed, there is no letup in the pace of the instruction or the engagement of the children. This is another half hour of purely focused, teacher-directed activity. The objective is clear: every child should strive to meet the high performance goals of the teacher, and each child should be pressed to excel to whatever level he or she might be capable of achieving. At the end of this class, I was beginning to wonder how Alicia does this. She sees ten groups of children throughout the day. That's five solid hours of this incredible pace and intensity. Even with training, I'm not sure I could handle it.

In no time another thirty minutes have elapsed and the next group is walking in. The third graders stand up, Alicia gives them a saying to think about (the content of which escapes me at the moment) and

the kids exchange places. Now it's time for the first graders and we are back to decoding. "My turn," then "Your turn, get ready." The sub-groups. The point game. By now I am familiar with the routine and can spend some time in contemplation. I thumb through the readers and listen to the children as they read. One thought pervades: this is hard work. These kids are not fooling around. Each one is being pushed to his or her limit. Even with this incredible assistance, learning to read is probably the most difficult thing these kids have ever done.

Would these kids have just "picked up" reading without such instruction? Would they, suddenly one day when they're ready, just have picked up a book and figured it all out? After seeing their slow, difficult, step-by-step climb to success I'd have to say, "no way." These kids would almost certainly have joined the hard core illiterates who now comprise twenty percent of our adult population (almost all of whom, incidentally, attended school through the fourth grade). In another school, indeed in most schools, these children would be in the hands of people with nothing more to offer than the vague hope that someday, maybe, they'd catch on.

Another thought emerges: these kids can't lose. The program is incremental; new concepts are introduced only when the kids are ready. It's thorough, so they won't miss anything. The review is intense, so they won't forget. Their reading is carefully designed for success—no child has to do anything that he hasn't already been taught to do. This class is nothing less than an expression of the teacher's determination that not one single student will slip through the cracks.

At the end of yet another half-hour I am exhausted just watching. I say something like, "It's been wonderful, but I have to leave now," before returning to the calmer company of my first contact, George. I ask him whether the other schools in his district are doing this, and he says that, no, Davenport is the only one. I ask what would happen to these kids at another school and he rolls his eyes. There'd be no chance, he concludes. With the statewide elimination of programs like this over the past decade, these kids would be heading for society's scrap heap.

I pause to reflect. What would today's mainstream teachers, fresh out of college, think about this class that I had just witnessed? Well, I would guess

that they'd be horrified. I can imagine the comments now. "Too mechanical," "no creativity," "it's like an assembly line." The question of whether it works or not would probably not be raised. The implicit, unquestioned assumption that the appeal of the process is the only factor worth considering would certainly rule the discussion.

Is it an assembly line? Of course it is. We have one skill (reading), one research-supported method of attacking it (phonics), and one research-supported method of delivering the instruction (direct instruction). We have hundreds of children attending every school. If we are egalitarians then we should want them all to have the same opportunity to master this skill. Why would we cheat them by applying anything less than our best approach? How could we afford to teach them individually or use anything other than a uniform, consistent format? And when it comes to basic skills, don't we want the same sort of uniform results that we get from an assembly line?

Does this program inspire creativity in the student? Not today, it doesn't. But there will be plenty of opportunities for creativity tomorrow, when the child can read effortlessly and can devote all of his attention to the content rather than to the task of figuring out what the words are. The child from this program will enjoy far more fun and creativity than most of his peers, who will never read the book or who will give up because the task is just too difficult.

The conflict between Direct Instruction and today's prevailing methods has its roots in the work ethic. In previous, more deprived generations it was inherently understood that one must work today in order to profit tomorrow. Direct Instruction largely dispenses with the fun and games and gets the job done. Of course you would not use DI all day. You'd use it during the part of the day when you want the children to learn something that doesn't come naturally, with the expectation that the rest of the day might be even more fun because the children have actually learned something. But I'm not holding my breath until the idea catches on. Among today's ed school graduates, the twenty-something parishioners of the Church of Instant Gratification, the concepts behind this curriculum are not likely to become popular any time soon. ♦

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Four Promising Programs for Raising Student Achievement

Reprinted with the permission of the American Federation of Teachers from "Raising Student Achievement, A Resource Guide for Redesigning Low-Performing Schools."

Why are some schools effective at educating most students, even those from disadvantaged high-poverty areas, while others struggle fruitlessly to fulfill their academic mission? How can schools replicate the successes of their more effective counterparts?

Researchers, working for years to answer these questions, have described the characteristics of successful schools—e.g., high expectations for all students; challenging curricula; clear standards and a coherent, focused academic mission; high-quality professional development aligned to the standards; small class sizes, especially in the early grades; an orderly and disciplined learning environment; a supportive and collegial atmosphere; an intervention system designed to ensure that struggling students can meet the standards. But, while we now know a great deal about *which* reforms are effective, comparatively little is known about *how* to achieve them.

As many schools have found out the hard way, systemic reform is extremely difficult—especially when it must occur simultaneously on many fronts, and is begun without benefit of high-quality curriculum materials, appropriate professional development, or readily-available technical assistance. In fact, a number of schools—especially those that are already foundering—have found that lasting improvement is impossible without concrete, step-by-step implementation support.

According to a recent study of efforts to raise academic achievement for at-risk students (Stringfield, et al., 1996), the reform strategies that achieve the greatest academic gains are those chosen and supported by faculty, as well as administrators. Success is also dependent on the existence of a challenging curriculum, and on paying "a great deal of attention to issues of initial and long-term implementation, and to institutionalizing the reforms." This and other studies have also found that schoolwide reforms tend to be more effective than pull-out or patchwork programs, and that externally developed programs—particularly those with support networks from which schools can draw strength and tangible assistance—tend to do better than local designs.

Given these and similar research findings, we developed the criteria below to help identify promising programs for raising student achievement, especially in low-performing schools. You will find descriptions of four of these programs on the following pages.

All four programs attempt *schoolwide* improvement, offer the kinds of materials, tools and training that increase the likelihood of effective replication, and primarily affect curriculum and pedagogy—the areas over which faculty have the most control. Although each particular program has its own strengths and weaknesses, all show evidence of:

- **High Standards.** The program helps all students acquire the skills and/or knowledge they need to successfully perform to high academic standards.
- **Effectiveness.** The program has proven to be effective in raising the academic achievement levels of "at-risk" students in low-performing schools, based on *independent* evaluations.
- **Replicability.** The program has been *effectively* implemented in multiple sites beyond the original pilot school(s).
- **Support Structures.** Professional development, materials, and ongoing implementation support are available for the program, either through the program's developer, independent contractors, or dissemination networks established by schools already in the program.

Success for All (SFA)

Grades Covered	Elementary/K-6.
Curriculum Materials	Curriculum guides, curriculum materials, children's literature, daily lesson plans, and teacher manuals are provided for grades K-6 in reading, writing, and language arts.
Instructional Support/ Professional Development	Through lesson plans and teachers' manuals, specific instructional guidance is provided for each part of the curriculum. Professional development is also provided as a part of the basic cost of the program, with pre- and post-implementation workshops for all instructional staff. In addition, advanced training is provided for the principal and a "program facilitator," who works as an on-site coach/coordinator in the school.
School Reform/ Restructuring Assistance	This is a schoolwide restructuring program, that affects curriculum, pedagogy, scheduling, resource allocation, professional development and family support services. To help ensure success, a clear commitment on the part of administrators and a secret ballot endorsement by at least 80 percent of the school staff is a required part of the application process. Once accepted, schools receive implementation assistance and training, as well as continuing support through a "network" with researchers and other SFA schools.
Role of Paraprofessionals	To some extent, the deployment of classroom paraprofessionals is determined at the school level. SFA recommends their use as classroom aides in pre-K and K and as one-on-one tutors working under the direction of certified teachers with students with mild reading difficulties.
Cost of Implementation	Most Success for All schools have funded the program as a Title I schoolwide project. For a school with 500 students, SFA estimates the first-year implementation costs to be \$90-\$100 per student for training, materials, and follow-up visits. ¹ If the facilitator, tutor, and other SFA-related staff positions cannot be filled by a redeployment of existing staff, the costs related to the hiring of additional staff may range between \$450 to \$1,100 per student.
Results*/Effect Size²	Reading (+.34 to +.82); Word Attack (+.51 to +4.22). ³ <i>* To give a sense of scale, an effect size of +1.00 would be equivalent to an increase of 100 points on the SAT scale or 15 points of IQ—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (the norm for mainstream students).</i>

Success for All (SFA) is an elementary school restructuring program, designed to deliver intensive academic assistance to student populations at risk of school failure. Developed in the mid-1980s by Dr. Robert Slavin, a researcher at

Johns Hopkins University, SFA will be in place in more than 750 (mostly high-poverty Title I) schools across the country, as of fall 1997.⁴ Because learning to read has been shown to be critical for academic success, the program was built around research into

the most effective ways to teach reading and strategies to catch and correct problems early.

Main Features

Reading and Writing Program—The core of Success for All is a reading curriculum that incorporates research-based instructional practices, including cooperative learning. In kindergarten and grade 1, the program emphasizes reading readiness and the development of oral language. Students work on phonemic awareness activities to help develop auditory discrimination; become familiar with books, letters and phonetically-regular words; and listen to, retell, and dramatize children's literature and thematic units based in science and history. When students reach the primer level, they use an adaptation of another Johns Hopkins University-developed program: Cooperative Integrated Reading and Composition (CIRC). In addition to receiving direct instruction from teachers in reading comprehension and writing, SFA and CIRC students engage in cooperative learning activities built around oral reading in pairs, structured discussion, summarization and retelling of stories, vocabulary building, decoding practice, and story-related writing. Detailed teachers' manuals and support materials, through grade 6, are built around children's literature and the most widely used basals and anthologies. Classroom libraries of trade books at the students' reading level are provided to each teacher, along with support materials.

Reading Groups—Although heterogeneous, age-grouped classes are conducted most of the day, students in grades 1-3 (and sometimes 4-5 or 4-6) are regrouped for reading. A common, 90-minute reading period is established across grades, during which students are regrouped by reading performance level. By establishing a common period and using all certified staff (including tutors, librarians, art teachers, etc.), class size for these groups is substantially below the size of homeroom classes. By eliminating the need for multiple reading groups, direct instruction time is increased and student busywork is decreased, thus accelerating the pace of learning.

Frequent Assessments—Every eight weeks, reading teachers assess student progress using personal observations and curriculum-based and formal measures. Teachers use the results of these assessments to

identify students who are falling behind and need extra help and tutoring, as well as those who are progressing quickly and should be placed in a higher performance group. At the same time, teachers attempt to identify students who need other types of assistance, such as family interventions or screening for hearing or vision problems.

Tutors—Another important element in the program is the use of one-on-one tutoring, the most effective form of instruction, for students with reading problems. Tutors are certified teachers who are reading specialists or have experience teaching Title I or special education students. Trained paraprofessionals may also be used for students with less severe reading difficulties, under direction of the certified tutor. Children with reading difficulties are tutored during a 20-minute period during the day when neither reading nor math is being taught in class. To prevent problems from developing and to minimize the number of older students needing remediation, first-grade students are given priority for tutoring. Certified tutors also act as regular reading teachers during the 90-minute reading periods.

Program Facilitator—Another key element of the program is the use of a program facilitator at each school. A member of the school staff who is released from regular classroom responsibilities, the facilitator works (with the principal) to oversee the details of implementation, including scheduling changes and professional development arrangements. The facilitator also monitors the implementation of the curriculum in the classroom, and is available to assist/coach individual teachers and tutors through any problems. He or she also helps to deal with student behavior problems and acts as a liaison between the staff and the family support team.

Training—The professional development provided by Success for All includes a brief orientation and training period, in-class coaching and assistance, and periodic inservice workshops and discussion groups. In the first year of implementation, three days of inservice training are provided for all teachers, tutors, and classroom paraprofessionals at the beginning of the school year. The initial training for both the facilitator and the principal is more comprehensive, usually a weeklong training session at Johns Hopkins University. Throughout the year, researchers make frequent site visits during which

they make classroom observations, meet with staff, and conduct inservice training. Facilitators also arrange sessions for staff to share information, discuss problems and solutions, and collaborate on the needs of individual children.

Family Support Team—The family support team consists of the facilitator, parent liaison (if any), counselor (if any), principal or vice principal (if any), and any other staff the school deems appropriate. The team promotes parental involvement in the school—providing information, organizing school-related activities, and conducting workshops for parents. It also intervenes to help solve behavior and other problems, acts as a resource for teachers and parents, and helps coordinate services with community-based health, social service, and juvenile justice agencies.

Results

Not only is Success for All designed around research into effective teaching methods, but the program itself has an extensive body of research demonstrating its effectiveness. Statistically significant positive effects have been found on every measure from grades 1 to 5, with especially large gains for students most at risk for failure. These effects have also been shown to be cumulative: While first-grade SFA students are about three months ahead of matched control students in reading, by the fifth grade, they outscore control students by an average of a full grade level. Bilingual students and students in the lowest quartile of their grades average even higher gains, with effect size changes of +1.00 or more (see footnote 2).

The program has also been found to cut special education placements in half, on average, and one study found that the program eliminated the black-white achievement gap.

Case Studies

Baltimore, Maryland. The birthplace of Success for All, Baltimore has five of the longest-running SFA implementations in the country. The schools are located in inner-city, predominantly African-American neighborhoods, with between 75 percent to 96 percent of students eligible for school lunch

subsidies. On average, SFA schools outperform control schools in the city at every grade level. For example, CTBS scores for SFA and control schools were collected during the 1992-93 school year. By the fifth grade, SFA students were found to be 75 percent of a grade equivalent ahead of control students on the CTBS Total Reading assessment. Evaluations have also found positive effects on attendance and retention rates.

Houston, Texas. In Houston, a recent experiment in the large-scale replication of Success for All has also shown positive results. What began in 1993 as a special summer school program, offered by the school district, was quickly expanded into a reform option for all elementary schools. By the 1994-95 school year, more than 70 schools had chosen to participate. Unfortunately, with the quick start-up, many schools did not receive the necessary training and materials before the beginning of the school year. Despite these widespread implementation problems, the Houston experiment appears to be working. According to a preliminary study by the University of Memphis,³ SFA's median first-year results varied from $ES=+.15$ to $+.33$ (see footnote 2) in Houston, largely depending on whether all of the program's features had been faithfully implemented. Although lower than the achievement gains reported in previous studies of smaller-scale implementations, these results still demonstrate a statistically significant improvement.

Considerations

Although the research on Success for All is overwhelming in proving its effectiveness, any successful implementation will require a substantial commitment in funding, staff time, and school restructuring work. Because this program was developed for, and is primarily used by, high-poverty Title I schools, some have the idea that the program is primarily remedial (interpreted to mean "dumbed down"). The truth, however, is that SFA's developers went out of their way to strike a workable balance between challenging content and the acquisition of basic skills, incorporating everything from guided skill instruction to basals to children's classics such as *Charlotte's Web*. As such, it should be considered by any elementary school, across the demographic

range, that needs to boost reading scores and student achievement levels.

Although the costs of implementation are high, the reallocation of existing Title I funds and the redeployment of existing staff can make it affordable, even in high-poverty schools and districts. For example, a school that already has four Title I teachers could train one to be the SFA facilitator, while the other three become reading teachers/tutors.

Another tradeoff arises from Success for All's intensive focus on reading in the primary grades. This could result in less money for other programs and activities, and more resources allocated for grades 1-3 versus grades 4-6. But while some of these trade-offs may be difficult, research and common sense tell us that the best, most cost-effective academic intervention program is one that prevents students from falling behind in the first place. For long-term success, it is critical that young students be provided with a firm academic foundation. The ability to read with ease and comprehension is the bedrock upon which that foundation is built. This program has proven it can help schools accomplish this goal.

Publications/Resources

Robert E. Slavin, Nancy A. Madden, Lawrence, J. Dolan and Barbara A. Wasik. *Every Child, Every School: Success for All* (1996). Thousand Oaks: Corwin Press, Inc. 805/499-9774.

Robert E. Slavin, et al. "Whenever and Wherever We Choose: The Replication of Success for All," *Phi Delta Kappan* (April 1994).

Robert E. Slavin, et al. "Preventing Early School Failure: What Works," *Educational Leadership*, (December 1992/January 1993).

For more information, contact: Center for Research on the Education of Students Placed at Risk, Johns Hopkins University, 3505 North Charles Street, Baltimore, Maryland 21218. **Phone:** 800/548-4998. **Fax:** 410/516-8890. **Internet:** <http://jhunix.hcf.jhu.edu/~reneek/sfa.html>

¹ Per-pupil costs may be lower in multischool implementations.

² An effect size is a standard means of expressing achievement gains and losses across studies, showing differences between experimental and control groups in terms of standard deviation. An effect size of +1.00 indicates that the experimental group outperformed the control group by one full standard deviation. To give a sense of scale, this would be equivalent to an increase of 100 points on the SAT scale, two stanines, 21 NCEs (normal curve equivalent ranks) or 15 points of IQ (Fashola and Slavin, 1996)—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (in range with mainstream America). Because of differences among study designs and assessments, this can only be considered a "rough" measure of comparison. In general, an effect size of +.25 or more is considered to be educationally significant.

³ Slavin, Madden, Dolan, Wasik, Ross, and Smith, 1994; Slavin, Madden Karweit, Liverman, and Dolan, 1990. Note: reading results data are pooled scores from all interventions, 1988-1993, with scores rising through each successive year of implementation.

⁴ **Roots and Wings**, a program to supplement the Success for All reading and language arts curriculum with curricula in math, social studies, and science for grades K-6, has also been developed through New American Schools Designs. Preliminary results are promising.

⁵ Nunnery, Ross, and Smith, 1996

'Success for All' in East New York

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Sometimes the tried and true really does work best. Just ask teachers in PS 159, an overcrowded school in the economically devastated East New York section of Brooklyn. As they searched for new ways to stem the increasing rate of reading failure among their students, the teachers kept coming back to what they knew worked: effective, research-based practice; ongoing professional development and support; family involvement; continuous assessment of student progress; and a structured framework to draw these elements together in a coherent, but not proscriptive way.

With district support, the teachers identified a program that took these elements of success and packaged them in a way that enabled teachers to teach reading more successfully: Success for All, a program developed by researchers at Johns Hopkins University to organize effective practices to ensure that all children will read in the early grades and that none will fall through the cracks.

The teachers read about and discussed the program, reviewed program materials, visited Success for All sites, participated in a presentation by Johns Hopkins staff, and decided to apply to become a Success for All school. This required that 80 percent of all the teachers vote to commit to the program for three years. "Our teachers are fantastic: hard-working, committed and enthusiastic," said Harriet Krohn, the SFA teacher facilitator. "Success for All offers a structure for shaping their passion, their skills, and their efforts. It makes sense and it works. Just look at the faces of the children—they glow with pride at their ability to read." And so they do.

"Show me your ick," said kindergarten teacher Crystal Hyman to the group seated around her. With smiles and giggles the youngsters tried to out-do each other making "ick" faces in response to a story they read together. In another part of the room, a trained paraprofessional led a second group of children through a series of chants accompanied by dramatic movements that clearly delighted both the youngsters and their coach. Across the hall, another kindergarten class moved swiftly through a 90-minute sequence of activities ranging from writing with magic pencils to identifying words on charts hung throughout the bright, print-rich room. Each child was engaged. Each was focused on the task at hand. Each child was reading successfully. Each face was glowing.

"Cooler" than the kindergarten and first-grade children, students in the upper grades were more apt to show their delight through the twinkles in their eyes, the eagerness of their responses, and the occasional comment. Arms waved high in the air in eager response to Nancy Miloscia's questions. "Can you support that idea?" Miloscia asked her reading group. "Think of the problem he had to solve. What else could he do?" Acting more like a book-group leader than a traditional teacher, Miloscia led the mostly fourth-grade youngsters through a lively session in which she pushed for the deeper answer, gently challenged them to defend their ideas, and encouraged each student to think in new and different ways. "I wasn't a good reader last year," one child confided. "Now I love to read."

Success for All is in its second year at PS 159, and the impact of the program on the school is already apparent. Students, teachers, parents, staff, and volunteers work together with a shared sense of purpose and a clear understanding of the high expectations in place for each member of the school community. And they are working hard.

"Make no mistake about it, this is hard work," explained Chapter Leader Judy Esposito. "But

good teachers have always worked hard. The difference for us is that now we can really see the impact of our hard work. Our children are reading." This sentiment was echoed by a parent volunteer who stated, "I didn't know what to think at first. But when you see something working, when you see your children reading and loving it, you do what you have to do to support the program."

Why is Success for All working at PS 159 and in more than 450 schools around the country? It is working because each of its essential elements—a research-based, effective approach to reading; regular student assessments every eight weeks; family support teams; a school-based program facilitator; reading tutors; and, central to all of this, ongoing, continuous professional development and technical assistance—is a proven, effective practice.

As UFT Vice President David Sherman sums up, "Success for All offers teachers a framework for organizing effective practice—the tried-and-true approaches we all know work. It is structured, but not stultifying; organized, but not proscriptive. I suggest that anyone looking to find a more effective, organized way to help all children learn to read to high standards take a look at what is happening at PS 159."

—MARYANN MARRAPODI

Program's not magic, but 'good teaching' is

"Magic pencils in the air!" With these words, the eager five-year-olds seated in a circle around Alicia Vincent begin their 90-minute Success for All reading period. Unlike the pencils waved by the excited kindergartners, the carefully structured SFA program is not magic. It is not even new. Instead, SFA insures that every child develops and sustains success in reading and writing through a coherent program based upon six proven, research-based elements of effective practice:

The program begins with grouping students across age and grade lines to create homogeneous reading groups for the daily 90-minute instructional periods and uses trained tutors and volunteers to keep the size of the groups as small as possible. Reading Roots, an early intervention initiative designed for kindergarten and first grade, actively engages children in games, singing, chanting, and writing with "magic pencils" to develop their language skills, phonetic competency, and facility in reading and re-reading phonetically regular minibooks to each other.

Reading Wings, designed for grades 2-5, uses cooperative learning activities to develop critical reading skills such as summarizing, predicting and defining plot, mood, and tone as students read and discuss school-selected basals and/or trade books. It also utilizes a writer's workshop format for students to draft, revise, edit, and publish their work.

Cooperative Learning encourages both individual accountability and group success by encouraging students to work together to help each other become more effective readers and writers.

Eight-week assessments for students in grades 1-5 are used to evaluate their progress and to make any necessary changes in reading group placement, family support interventions, or tutoring schedules.

Professional development and support is the key to implementing SFA. All teachers participate in three days of training before the program begins, in regularly scheduled on-site technical assistance from the SFA staff at Johns Hopkins and in coaching and mentoring provided by the site-based facilitator and the staff support teams in each school.

Family Support Teams work to promote parent involvement, and to integrate community and school resources to address the academic and non-academic needs of the children and their families.

Tutors are specially trained teachers who work one-to-one with students in grades 1-3 who are experiencing difficulty in reading.

According to Harriet Krohn, SFA facilitator at PS 159, "SFA is not magic, it's good teaching, well organized. But a little magic never hurts."

High Schools that Work (HSTW)

Grades Covered	High school/9-12.
Curriculum Materials	Limited pilot studies of new student curricula are being conducted.
Instructional Support/ Professional Development	HSTW schools are invited to participate in the program's annual professional development conference. Schools also receive a set of staff development guides on subjects ranging from assessment to site-based management, publications on successful practices, and a newsletter. A video series to support implementation of the program's "key practices" also is available; and schools can participate in an annual video teleconference on key implementation issues, for which study guides are distributed.
School Reform/ Restructuring Assistance	The program provides a framework, technical assistance, and a support network to help schools make the necessary changes in curricula, scheduling, resource allocation, and professional development. Support for systemic reform is offered at the state and district level through formal working relationships with education officials. Feedback from test, survey, and site-visit data, gathered in conjunction with the HSTW evaluation process, are made available to schools; as are recommendations for improvement. Assistance in identifying new funding sources also is provided.
Role of Paraprofessionals	Use of paraprofessionals is determined at the school level.
Cost of Implementation	Although HSTW funding varies greatly from state to state and school to school, the program recommends that \$15,000-\$20,000 in discretionary funding be devoted to implementation. Priority expenditures are for staff development, common planning time, and extra help for struggling students. Depending on the career focus, extra funds may be needed for new materials, equipment, technology, laboratories, etc.
Preliminary Results	In addition to other assessments, HSTW schools use a battery of tests drawn from the National Assessment of Educational Progress (NAEP). In 1993, 96 schools participated, resulting in a mean reading score of 267.1, a mean math score of 284.8, and a mean science score of 269.5. By 1996, scores had risen to 272.9 in reading, 285.3 in math, and 283.3 in science—significantly higher than NAEP national mean scores for vocational students of 266.6, 276.7 and 266.7 respectively. ¹ Schools which faithfully implement all of the program components showed the most dramatic gains, with scores approaching those achieved by the nation's college-bound students. ²

High Schools that Work (HSTW), a project of the Southern Regional Education Board, was designed to help states raise the academic achievement levels of career-bound students.³ As such, it historically has worked with and through state education departments, with an emphasis on

connecting the school house, district office, and state in a long-term collaborative effort. An HSTW coordinator, employed by the state, is trained to facilitate and oversee most aspects of the program, including implementation support and technical assistance site visits, which are conducted at least

every three years.

The main goal of the program is to help participating schools replace their general and vocational tracks with an academic core of high-level math, science, and English courses, integrated with quality vocational studies, thus helping to raise achievement and broaden students' educational and career opportunities. The program, begun in 1987, is now being used in more than 650 schools in 21 states.

Main Features

Working with state education departments, school systems, and school staff, HSTW attempts to help schools implement 10 "key practices" for accelerating student achievement:

High Expectations—Establish high expectations and standards for general and vocational education students, which are clear and understood by all stakeholders—including students, parents, school staff, and the business community.

Vocational Studies—Increase access to intellectually challenging vocational and technical courses, with a major emphasis on preparation for continuing education and on developing the high-level mathematics, science, language arts, and problem-solving competencies necessary to function well in today's workplace.

Academic Studies—Increase access to core academic courses from the college-preparatory curriculum, using functional and applied strategies that enable students to see the relationship between course content and future employment opportunities.

Program of Study—Increase graduation requirements for general and vocational track students to include four years of college-preparatory English, three years each of math and science (with at least two years in each subject area of equivalent content to courses offered in the college-prep program), and a major concentration composed of at least four Carnegie units in a broad technical or academic course of study and at least two Carnegie units in related technical or academic courses.

Work-Based Learning—Provide students with a structured system of work-based and high-status school-based learning—high school and postsecondary—collaboratively planned by educators,

employers, and workers, and resulting in an industry-recognized credential and employment opportunities in a career pathway.

Common Planning—Provide the organizational structure, staff development, and time that allow academic and vocational teachers to work together in planning and providing integrated instruction in high-status academic and technical content.

Student Engagement—Tailor instructional practices to foster more active engagement in learning on the part of students.

Guidance—Involve each student and his or her parent(s) in a career guidance and individual counseling system that can help students focus on completing an accelerated program of study with a career or academic major.

Extra Help—Establish a structured system to provide the extra assistance and support that can help career-bound students successfully complete an accelerated program of study that includes challenging academic content and a major.

Keeping Score—Use student assessment and program evaluation data to continuously improve curriculum, instruction, school climate, organization, and management—with the goal of raising student achievement.

Results

With permission from the NAEP Governing Board, HSTW administers a battery of tests to students in reading, mathematics, and science, which are drawn from and normed against NAEP assessments. This has allowed the program to gauge schools' progress longitudinally as well as in reference to national norms. Test results (gathered in 1990, 1993, 1994, and 1996) show both substantive overall gains and large variances among school sites. Mean scores for all 514 sites participating in the 1996 assessments show that HSTW students significantly outperform vocational education students nationally: *HSTW* 272.6 (reading), 285.2 (math), 282.6 (science); *national* 266.6 (reading), 276.7 (math), and 266.7 (science).⁴ The assessments also show that the key variable among the highest- and lowest-performing HSTW schools is not pre-program scores or number of years in the program, but the extent to which schools have actually imple-

mented the program's "key practices."

Concurrent with the NAEP assessments (now on a two-year schedule), the program has also commissioned independent student, teacher, and administrator surveys for each school, as well as transcript analyses comparing the actual level of course offerings against program goals. On the off-years (beginning in 1997), studies of the educational and career status of first-year graduates will also be conducted.

Case Studies

St. Mary's County Technical Center (St. Mary's County, Maryland). In 1988, St. Mary's County Technical Center adopted the HSTW program. An underutilized vocational education facility, held in low regard by the local business community, the high school had become a dumping ground for the county's discipline problems. In addition to the large number of students who lacked basic literacy skills, 34 percent of students were discipline referrals and 34 percent were classified as "special education." In accordance with HSTW, the school's curriculum was revamped. The general track was eliminated, and academic requirements were strengthened. The vocational program was also beefed up, with the incorporation of applied learning courses and the expectation that all students were being prepared for postsecondary training. Interim results are positive. In 1990-91, senior SAT scores averaged 869. By 1994-95, with a similar student population and 50 percent more students taking the test, SAT scores had jumped 70 points to an average of 939. During those years, the dropout rate also fell from 7.2 percent to 3.6 percent, enrollment went up, and discipline problems were cut by half.

Sussex Technical High School (Georgetown, Delaware). Sussex Technical High School, located in rural southern Delaware, opened in 1961 to serve part-time students from seven independent "feeder" districts. By the mid-1980s, serious problems were evident. Enrollment, test scores, and student expectations were all low and getting lower. In 1991, Sussex Tech opened as a redesigned HSTW school. The general track was eliminated, graduation requirements were raised, and challenging academic and vocational courses were introduced. The lowest-scoring school to participate in HSTW's 1990

assessments, by 1996 Sussex had managed to take a similar group of students and raise the school's score to above the HSTW mean for all subjects tested (reading, math, and science). In 1994, only 8 percent of students took the SAT, with a combined average score of 790. In 1996, 28 percent of students chose to take the test, with a combined average score of 876.

Considerations

While the research on this program is still preliminary, it is clear that a large number of schools have been helped to make the kinds of substantive reforms which lead to higher student achievement. A significant percentage, however, have yet to show meaningful improvement. According to data collected by the program in 1996, one-third of career-bound students at participating sites were still enrolled in watered-down academic courses. Half were enrolled in vocational courses that lacked challenging assignments and projects.

HSTW has responded to these implementation problems by beefing-up technical assistance services to school sites. One important problem has yet to be addressed, however. Understanding that systemic reform is crucial to long-term success, thus far, only schools from partnership states have been allowed formal participation in the program.⁵ As a part of the implementation process, state education officials are asked to assume much of the responsibility for program dissemination, oversight, and monitoring, while district and school administrators are asked to commit to the program and its "key practices." Yet there appears to be little if any direct contact with the majority of school staff until they are being trained to implement the program. In other words, the program depends on competence and support at multiple bureaucratic levels, while having no formal mechanism to ensure staff "buy-in" at individual school sites. Thus, some schools have embraced the program as a ray of hope, while others may regard it as yet another in a long line of futile, top-down "reform" schemes. In discussions, HSTW officials have expressed interest in opening up the program to reform-minded school districts in non-partnership states. The program has also begun to organize an urban network to help provide support to dis-

tricts with multiple HSTW sites. Whether formal participation by individual schools will be allowed—no matter how committed and supportive staff members may be—is still far from certain.

Despite glitches, HSTW has many obvious strengths: It is designed to help students achieve to high standards. It gives proper focus to—and helps provide—high-quality professional development. It stresses the need for a structured support system for struggling students. It helps to define, upgrade, and mesh essential academic and vocational skills. It provides a system of student assessment, data-collection, and feedback that can help spur continuous improvement. It offers assistance in obtaining business and community support. And it provides a post-implementation support network for all participating schools.

Given these benefits, local unions and interested technical and vocational schools outside of the 21 partner states may want to consider approaching state and/or district administrators about official adoption of the program. To help support successful replications, local initiatives to ensure that staff members at each participating school are fully informed, supportive, and involved—prior to implementation—should also be considered.

Publications/Resources

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Reaching the Next Step: How School to Career Can Help Students Reach High Academic Standards and Prepare for Good Jobs (1997). American Federation of Teachers.

For more information, contact: High Schools that Work, Southern Regional Education Board, 592 Tenth Street, NW, Atlanta, GA 30318. **Phone:** 404/875-9211. **Fax:** 404/872-1477. **Internet:** <http://www.peach.net/sreb/hstw/high.html>

¹ Differences in achievement are statistically significant at the 1.3 level for reading, the 1.6 level for mathematics, and the 1.5 level for science.

² The most recent national NAEP scores for college-bound students are 302.4 for reading (1992), 316.8 for mathematics (1992) and 306.8 for science (1990).

³ In this context, "career-bound students" are defined as those who, upon entering high school, do not intend to prepare for admission to a four-year college.

⁴ See footnote 1.

⁵ As of 1997, the 21 official partnership states were: Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Commission.

Oxford blended the reforms to form a coherent plan that erases the vague "general" high school track. Instead, students entering high school plan a focused four-year program of study with the help of parents and of teachers assigned as mentors who stay with them throughout their high school years.

The first class that started as ninth graders under Oxford's reforms graduated last spring. The results of the program so far have been noteworthy. The Southern Regional Education Board has selected Oxford as one of only five "demonstration sites" for High Schools that Work in its 21 member states. During the next year, with the aid of a grant from the Appalachian Regional Commission, Oxford teachers and administrators will show other educators what has worked for Oxford.

"One premise of High Schools that Work, says Oxford High School's Coordinator of Vocational/Technical Education Jane Batey, "is to increase the integration of academic and vocational instruction. In academic programs, we want to use strategies such as hands-on and student-activity-centered, rather than teacher-activity-centered."

All of that is happening in Ms. Robertson's applied biochemistry course, where Oxford kids—not necessarily bound for a university—learn by doing some biology, some chemistry, and some basic lab and measuring techniques.

The work is hands-on, requires research and writing, and is practical. For example, in learning immediate uses of knowledge about acidity and alkalinity, the students consider garden soil and the needs of various plants; rainwater and acid rain; creek water and pollution. They go to the classroom computers to answer questions about what happens to a person whose blood becomes too acidic or too alkaline.

They experiment, they look things up, they write answers to questions. Their teacher assists as needed. Lecturing is not the usual mode of teaching here. And, says Mrs. Batey, students never ask the question, "Why do I need to know this?"

Raising Expectations

The High Schools that Work concept has spread more rapidly in many other Southeastern states than it has in Alabama. A network of 650 high schools in 21 states participate in the program. Only seven of them—Oxford among them—are in Alabama. "When we signed on in 1992 or 1993, there were 13 high schools (that also signed on in Alabama)," recalls Mrs. Batey. The reason the number has dwindled to seven: lack of continuity in state backing.

That was the year the state Board of Education voted the "four-by-four" curriculum but didn't fund it," Mrs. Batey explains. "I think that's why the movement sort of filtered away. The key goal [of High Schools that Work] is raising expectations. The 13 schools that signed on thought there would be a big movement. But there wasn't, because it wasn't funded."

Despite the funding disappointment, the Oxford school system plunged ahead, using its own resources.

"We paid for everything for four-by-four and High Schools that Work, Mrs. Batey says. The school was able to get some Tech-Prep federal grant money funneled through the state.

In September of 1992, the high school implemented the four-by-four curriculum, requiring that all Oxford graduates have four years each of math, English, social studies, and science.

Simultaneously, Oxford overhauled its curriculum offerings to give students the choice of selecting applied courses and of going for a Tech-Prep endorsement on their diplomas.

The high school joined in a consortium with Anniston High School and Ayers State Technical College to offer a Tech-Prep curriculum that meshes as seamlessly as possible with the two-year col-

lege's curriculum. The remainder of the school systems in Calhoun County have since joined the consortium.

Oxford also published a curriculum guide, much like college course catalogs, and offered the Tech-Prep course of study in three major program areas, the high school equivalent of college majors. "We want them to complete a sequenced program," Mrs. Batey says.

Tech-prep students select from among three major program areas, or concentrations, beginning with their freshman year. Students may choose majors in Engineering and Industrial Technology, Health and Human Services, or Business. These are considered to fit with virtually any direction the student plans to pursue after high school.

Tech-prep is the school's curriculum reform. It became part of Oxford's High Schools that Work plan, which is an overall philosophy change.

Yvonne Thayer of the Southern Regional Education Board says High Schools that Work is an "effort to raise the standards for career-bound students—they used to be called vocational students—who in the past were ignored."

Oxford's program has been so appealing that most Oxford students may graduate with a Tech-Prep endorsement.

About 80 percent of Oxford students go on to some form of higher education. A large number go on to two-year colleges and many others go to JSU or other four-year colleges.

Statistics compiled by Mrs. Batey show that this year, with 194 in Oxford's projected graduation class, 157 will receive diplomas with Tech-Prep endorsements.

Of the 157 endorsements, 95 will be on standard diplomas; 36 advanced diplomas; and 26 on honors diplomas.

The old vocational/academic distinction between students has been wiped out. Whether students choose careers in engineering or law, drafting or clerical work, they all buy into the value of the majors that guide their high school studies and that bring the added endorsement on their diplomas.

Mrs. Batey views the way the program has worked out in Oxford with almost a sense of glee. "I can't wait for somebody else to do this," she says.

Parents in the Mix

Involving students and their parents in planning the student's school years is a key to what Oxford is doing.

High Schools that Work was the impetus for Oxford's mentoring program, called TAPS, for "Teachers Assisting Parents and Students." Students are assigned as freshmen to a homeroom teacher who will stay with them as a mentor throughout four years in high school, consulting with students and their parents in planning course schedules.

"It is a great way to interact with parents," biology teacher Robertson says. She's in her third year with the 25 students she is assigned to mentor. She's looking forward this year to taking part in the activities of high school juniors including planning for this year's junior-senior prom.

"You become very close to the children," she says. "Teaching is more than just being in the classroom. They're with you more than they're with their parents. You get to know them."

From their freshman year at Oxford, students know the requirements for graduation and for their particular programs. "They are plastered on the walls," Mrs. Batey says. "The students get handouts ... when they're working on their schedules they look at what they will be doing two years down the road."

Parental and public backing has been key to what Oxford has accomplished, she says. "You can't do a program like this unless you have [public support]."

Each week, in the Oxford newspaper, an ad sponsored by Mullinax Auto Sales recognizes the high school's Vocational/Tech-Prep students of the week. At the end of the year, the business gives a \$500 scholarship to the Tech-Prep Student of the Year. In the summer, the emphasis continues with a Tech-Prep graduate photo and story. The ads are noticed, and they strengthen community support for the program, Mrs. Batey says.

The requirements of the program put heavy loads on the students, Mrs. Batey says, but the heavier requirements have brought greater student interest rather than dropouts.

"Students are more interested in school, involved more in what's going on in the classroom," Mrs. Batey says. "I think it has helped us refocus on why we're here."

"High school kids are pretty astute. They see on TV about preparing for the work force, and the skills required. I think kids are more interested in their education than we give them credit for."

The Real Test

One factor that made Oxford notable to the SREB and got it selected as a demonstration site was the performance of Oxford students on the national achievement test used in the High Schools that Work program, the National Assessment of Education Progress.

"The NAEP test is difficult. It keys in on problem solving and critical thinking strategies," Mrs. Batey says. "This is the test you hear about when Washington talks about raising expectations."

In NAEP testing, 100 Oxford students are randomly selected to be tested. The tests are not simple bubbling of answers to problems, but rather involve hands-on experiments, problem-solving, and written answers. Test results in reading, math, and science show Oxford scores above goals set by the Schools that Work program and also exceed national proficiency standards.

"They looked very, very strong, says Mrs. Thayer. "Students are doing well."

SREB representatives have visited the high school and have been impressed, Mrs. Thayer says, "What we found confirms the school is doing things to help career-bound students. Administrators and teachers have high expectations."

Oxford's programs are benchmarked to industry standards the SREB team found. "They look at a national curriculum that says 'you must do these things and students will have the preparation business wants.' Not many schools have reached that level. So we felt that was significant."

The teams also found teachers give more homework, ask students to do more outside reading and write more papers. "Those are indicators we were pleased about," Mrs. Thayer says.

"The last thing I would mention is that it is very clear the community and the employers support the school. It is clear the community is involved and really owns that school."

What seems different about Oxford, Mrs. Thayer says, is "there's a commitment, I think, on the part of the educators and the administration that they're going to do whatever they need to do for kids to achieve and perform well. Some schools, you go in and people have given up and have said certain kids just can't perform—which we don't believe."

"I see the enthusiasm in the building. I didn't go into classrooms that weren't exciting. Everybody was really on target, really looking at different ways of doing things."

At Oxford, "the sense I have about that school, once they decide to do something they get on with it. I think it is why they are successful. And it pays off. It shows that."

Direct Instruction (DI)

Grades Covered	Primarily an elementary school (pre-K-6) program, but also used successfully with secondary and adult special education and remedial students.
Curriculum Materials	Curricular materials, daily lessons, and teachers' guides are available for grades K-6 in reading, language arts, spelling, and math; grades 4-6 in expressive writing; grades 3-6 in science; grades 3-12 in corrective reading; and grades 4-12 in corrective math. ¹
Instructional Support/ Professional Development	This is a commercially published program; materials may be purchased by individual grade and subject, as well as in a package suitable for schoolwide implementations. Professional development and implementation support of differing levels of quality can be contracted from various providers for both single-subject and schoolwide implementations. At times, the program's scripted teachers' guides have been used in lieu of—rather than in addition to—adequate professional development, giving rise to criticism of the program for being “teacher-proof.”
School Reform/ Restructuring Assistance	Limited assistance can be contracted from some providers as part of their implementation-support package.
Role of Paraprofessionals	Trained classroom paraprofessionals are fully integrated into the program, working as instructional aides, one-on-one tutors, and small group leaders under the direction of certified teachers.
Cost of Implementation	For a schoolwide first-year implementation of the K-5 reading, writing, language, and math curriculum, the estimated costs are \$150-\$200 per student, including materials, training of staff, and a part-time school facilitator/curriculum coach. ² A first-year implementation of a stand-alone reading/language arts program (“Reading Mastery”) is estimated at \$65-\$100 per student, professional development not included.
Results*/Effect Size³	Language (+.49 to +.84); reading comprehension (+.07 to +.69); math (+.57 to +1.11). ⁴ <i>* To give a sense of scale, an effect size of +1.00 would be equivalent to an increase of 100 points on the SAT scale or 15 points of IQ—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (the norm for mainstream students).</i>

Direct Instruction (DI) is a highly-structured instructional approach, designed to accelerate the learning of at-risk students. Curriculum materials and instructional sequences attempt to move students to mastery at the fastest possible pace. The oldest version of the program, Distar, was developed in the 1960s as a part of Project Follow Through, a massive educational initiative of President Johnson's War on Poverty. Despite its success in raising student achievement

levels, Distar was heavily criticized for being too rigid; concentrating too heavily on the basics; and for some vendors' poor implementation practices, such as selling it without support as a “teacher-proof” program. As DI, the original Distar program has been expanded and enriched. Although the early mastery of basic skills is still a key element, the program also addresses students' general comprehension and analytic skills. While DI has been used successfully as a schoolwide program, the reading and lan-

guage arts (and sometimes math) portions of the program are more frequently purchased for separate implementations. Either way, adequate professional development, ensuring that practitioners understand what the program is and how it works, is essential for successful implementation.

Main Features

Scripted Lesson Plans—Classroom scripts are a hallmark of Direct Instruction; the scripts are written, tested, rewritten, retested—polished in a cycle of classroom field-testing and revision that ends only when trials show that 90 percent of students grasp a lesson the first time around. Without proper orientation, many teachers find this level of prescriptiveness off-putting. The idea, however, is to ensure that even beginning teachers will be successful and to allow veteran educators to fill any holes in their teaching skills. With curricular and pedagogical details presented in precise relationship to each other, the program offers a template of how to teach particular skills and content. It is a template that can be applied to other curricula or modified to better suit the needs of a particular group of students, but only after the teaching methods have been learned to precision.

Research-tested Curriculum—In DI, skills are taught in sequence until students have fully internalized them (what cognitive researchers call “automaticity”) and students are able to generalize their learning in new, untaught situations. Each lesson sequence is extensively field-tested to determine the most effective and efficient way to lead students to mastery. For example, the first reading and language arts lessons focus on phonemic awareness, which are followed by increasingly complex phonics and decoding lessons, which are followed by lessons that focus on comprehension and analysis of content, etc. With each lesson building on previously-mastered skills and understandings, teachers are able to dramatically accelerate the pace of learning, even for the most disadvantaged students. New material is usually introduced through teacher presentations to the whole class or small groups, followed by guided practice and frequent checks for individual student mastery. Once the skill has been learned to the point of automaticity, cognitive studies show that it

is transferred from short-term to long-term memory, thus freeing children to apply their learning, attend to content, and move on to progressively more difficult and higher-order skills. Some have criticized the curriculum, particularly reading and language arts in the later grades, for not containing a broad or challenging enough selection of children’s literature. The program is easily supplemented, however, especially after students have been helped to master basic decoding skills.

Coaches/Facilitators—Another feature of the program is the use of in-class coaches for implementation support. The coach periodically monitors each classroom and is available to assist individual teachers with any problems, perhaps taking over a part of the lesson to model pedagogical procedures. In some cases, this role has been filled by an employee of the contractor, retained to help with implementation. In some multi-school implementations within a single district, teachers are released from regular classroom duty, given special training, and assigned to assist one or two schools.

Rapid Pace—Because the goal of DI is to move students to mastery as quickly as possible, a large proportion of classroom time is spent on fast-paced teacher-directed instruction, punctuated by rhythmic choral-group and individual-student responses. For instructors, this means a very full work day. For example, the DI program requires teachers to ask 300 or more questions in six small-group sessions each day and to perform reading checks every five or 10 lessons to ensure that all students reach 100 percent mastery. This level of interaction, which produces substantial achievement gains, is made possible by the use of the heavily-researched, highly refined scripts.

Achievement Grouping—Common periods for reading and math are established across grades during which students are regrouped by performance level, with the idea that all students will progress at the fastest possible pace and no students will be left behind. In several schools, these groups are reduced in size by assigning half of the class to a paraprofessional who leads the group through guided practice for half of the period, while the teacher introduces new material to the rest of the class, and then changing places. If the program is implemented well, these should not be rigid “tracks,” but flexible

achievement groups, with students who are progressing quickly periodically reassigned to a faster group and immediate assistance given to students who are struggling.

Frequent Assessments—Frequent assessments are also built into the program as a means to ensure that all students are reaching mastery, to detect any student who might need extra help before falling too far behind, and to identify students who need to be re-grouped.

Results

When this program is faithfully implemented, the results are stunning, with some high-poverty schools reporting average test scores at or above grade level—in a few cases, several grades above. In the 1977 evaluation of Project Follow Through, the achievement results of high-poverty Direct Instruction students were compared to students in nine other early education programs. DI students outperformed control group students and students in the other experimental programs on every academic measure, moving from the 20th percentile (the normal level of performance for children in poverty) to about the 50th percentile (even with mainstream students). In contrast, the achievement results of students in some of the other programs actually *declined* as a result of the intervention. Follow-up studies of students taught by Direct Instruction in the early grades also show enduring benefits. One New York comparison found that more than 63 percent of DI students graduated from college, as opposed to 38 percent of the control group; mean ninth-grade test scores were higher (ES=+.41, reading; ES=+.29, math; see footnote 3); retention rates were lower (21 percent versus 33 percent); and there were fewer dropouts (28 percent vs. 46 percent).

Case Studies

Wesley Elementary School (Houston, Texas). Wesley Elementary has one of the longest, continuous Direct Instruction implementations in the country. It is located in one of Houston's poorest, mostly African-American, neighborhoods and has a student population that is over 99 percent minority and 90 percent eligible for school lunch subsidies—

statistics that usually signal low achievement levels. For many years, however, this school has ranked in the top tier of all schools in the state. Much of this success has been credited to the school's 1975 adoption of Direct Instruction. First piloted in a Title I reading resource room, DI was soon in use throughout the school. By 1980, Wesley students had average test scores above the 80th percentile in both reading and vocabulary, outscoring students in comparison schools by more than 40 percentile points. In many of the succeeding years, Wesley's scores have been even higher, with some classes testing up to three years above grade level.

Utah ASAP Project. As a part of Utah's Accelerated Student Achievement Project (ASAP) to improve poor-performing Title I schools, three elementary schools adopted schoolwide DI programs during the 1994-95 school year. The preliminary achievement data are impressive, with students in all three DI schools outperforming more advantaged control school students in two Woodcock-Johnson subtests. After two years in the program, one school moved from last to second place (out of 24 schools) in the district's annual Math Olympics.

Considerations

This is a highly interactive, teacher-intensive approach to education. Teachers and paraprofessionals must be informed about—and prepared for—its fast pace and the structured, repetitive nature of the program.

DI also has a history of problematic implementations. When the program's developer, former preschool teacher Siegfried Engelmann, started designing the curriculum more than 25 years ago, he included fully-scripted teachers' guides, believing that they could serve as prototype demonstrations for specific teaching skills. In other words, one design objective was to provide hands-on teacher training *during* class-time, thus reducing start-up costs and at the same time ensuring that all teachers would have the skills necessary to reach the maximum achievement levels. Unfortunately, some marketers and administrators interpreted this to mean that *no* training was necessary, and that teaching skill was inconsequential to the success of the program. DI materials were sold as "teacher-proof,"

leaving administrators who didn't understand the program to impose it in a rigid, dictatorial manner. Educator horror-stories and lower-than-expected achievement levels were the predictable results. In some regions, this has left DI with a tarnished reputation that will have to be clarified and overcome. For any new implementation to be successful, proper orientation and training are vital—not only for teachers and paraprofessionals, but also for administrators.

Another frequent criticism is that DI provides so much structure and regimentation that it stifles student and teacher creativity. The student results—both in higher academic achievement levels and elevated measures of self-esteem—should speak for themselves. Teacher focus groups, following DI implementation in Broward County, Florida, are also instructive. Some teachers felt that the “standardized approach actually allowed more creativity, because a framework was in place within which to innovate,” and said that they could do more with content once DI had helped students acquire the necessary skills. Other teachers reported that they had initially been resistant, feeling that “even though the students thrived on it, the repetition was boring for the faculty,” but, over time, had found ways “to innovate within the repetition, so that they become drawn in as well.”⁵

The Broward implementation also incorporated another important feature: advanced training for and assignment of teaching staff to act as full-time “coaches” (facilitators) for the new DI schools. By retaining their status within the bargaining unit, it was made clear that these educators were a resource for the benefit of the teaching staff, not administrators. There was always someone to turn to, on a confidential basis, for advice and assistance. Given the inevitable frustrations, glitches, and misunderstandings that arise when implementing any new curriculum, using new instructional methods, this assistance has proven to be invaluable.

Publications/Resources

Adams, Gary L. and Engelmann, Siegfried. *Research on Direct Instruction: 25 Years Beyond Distar* (1996). Seattle: Educational Achievement Systems. 206/820-6111.

Effective School Practices, journal of the Association for Direct Instruction.

Gersten, Russell, et al. “Effectiveness of a Direct Instruction Academic Kindergarten for Low-Income Students,” *The Elementary School Journal* (November 1988).

For more information, contact: Direct Instruction Project, University of Oregon, College of Education, 170 Education, Eugene, Oregon 98195, or Association for Direct Instruction, P.O. Box 10252, Eugene, Oregon 98195. **Phone:** 800/995-2464. **E-mail:** ADIhome@aol.com **Internet:** <http://darkwing.uoregon.edu/~adiepl/>

¹ These materials are available from the SRA division of Macmillan/McGraw-Hill, 800/843-8855. In addition, several videodisc programs on math, geometry, chemistry, and earth science are available from BFA Educational Media, 800/221-1274.

² These costs are based on the budget for the Alliance of Quality Schools in Broward County, Florida, an effort to raise achievement levels of low-performing schools by implementing a DI reading and math curriculum. Estimated per-school costs were as follows: Direct Instruction materials, \$35,000; professional development (five days before school and five days during school), \$70,000; a trained teacher, assigned to act as a part-time coach/curriculum consultant for the school, \$35,600.

³ An effect size is a standard means of expressing achievement gains and losses across studies, showing differences between experimental and control groups in terms of standard deviation. An effect size of +1.00 indicates that the experimental group outperformed the control group by one full standard deviation. To give a sense of scale, this would be equivalent to an increase of 100 points on the SAT scale, two stanines, 21 NCEs (normal curve equivalent ranks) or 15 points of IQ (Fashola and Slavin, 1996)—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (in range with mainstream America). Because of differences among study designs and assessments, this can only be considered a “rough” measure of comparison. In general, an effect size of +.25 or more is considered to be educationally significant.

⁴ Data from Abt Associates’ 1977 evaluation of Project Follow Through and a 1996 meta-analysis of this and more recent studies. See *Research on Direct Instruction: 25 Years Beyond Distar*, by Gary L. Adams and Siegfried Engelmann.

⁵ “Alliance of Quality Schools Evaluation Report” (August 1996). School Board of Broward County, Florida.

An Instructional Program That's Worth Stealing

(Reprinted from American Teacher, Vol. 81, No. 8, May/June 1997)

*Lots of people wish direct instruction
would just go away...
if only the kids would stop learning so well*

As "Meccas" go, it doesn't look like much. Rimmed by barbed wire and chain link in a run-down corner of the Houston Independent School District, Mabel B. Wesley Elementary is not the type of school that could get by on looks alone. A squat, brown building flanked by rows of pale, wooden expansion classrooms, Wesley comes across as a well-tended but colorless outpost of public education. Yet the preK-5 school plays host to as many as 600 visitors a year: teachers, administrators, board members, camera crews, all wanting to know just why Wesley kids score so well academically.

Even district administrators were puzzled by the question several years ago. How could kids at *this* school, where about 80 percent qualify for lunch assistance and about 88 percent of students participate in standardized testing, consistently outperform students in the affluent suburbs, sometimes by one or two grade levels? The obvious answer ("They cheat!") fell by the wayside after numerous investigations, interrogations and even a few classroom shakedowns in search of pre-test subterfuge in the early 1990s.

In fact, there is no great mystery about how the school manages consistently to score above the state and district average, says Wilma B. Rimes, a former teacher and now principal at Wesley. First, both students and staff work long and hard at academics, preferably beginning at the pre-K level. Second, kids know from day one they must obey the rules. The school also makes sure that teachers and paraprofessionals have the materials and training they need to get the job done. And one other thing: Wesley teaches kids to read, write, spell and do math using a teaching program that is built around a clinically proven research base. Rimes says the approach makes a lot more sense than "taking someone's dissertation and going off on a wild goose chase."

The method they use is direct instruction.

Long considered a pariah in many education circles, direct instruction appears to be making something of a comeback—particularly among those educators looking for a program that can produce some hard evidence that it works. Pioneered at the University of Illinois in the mid-1960s and later at the University of Oregon, Direct Instruction, which was originally called DISTAR (Direct Instruction System for Teaching Arithmetic and Reading), was targeted toward at-risk early learners. Since then, the term "direct instruction" has been expanded to include more than 60 instructional programs and applied to disciplines ranging from corrective reading to chemistry. There are also several commercial programs based on DI prototypes from the University of Oregon, such as the Reading Mastery, Expressive Writing, and Connecting Math Concepts from Science Research Associates (SRA), a division of McGraw-Hill, that are used at Wesley today.

Classroom scripts are a hallmark of direct instruction; the scripts are written, tested, rewritten, retested—polished in a cycle of classroom field-testing and revision that ends only when trials show that 90 percent of students grasp a lesson the first time it is presented. Many scripts are either canned or put on ice for failing to meet that threshold, says Sigfried Engelmann, a former preschool teacher who cofounded Direct Instruction.

“Traditional educators express opinions through metaphysical arguments that revolve around the categories they understand,” Engelmann states in *War Against the Schools’ Academic Child Abuse* (Halcyon House, 1992). “But the real issues—those that make the difference between a program that works and one that founders—are very picky, precise, technical matters. The difference between the first field-test program and the finished product you develop is gritty detail, not global goop.”

Riveted on Task

Before direct instruction was introduced 21 years ago, Wesley was routinely sending kids who couldn’t read into middle school. Today, fifth-grade teacher Kandy Bond and other instructors speak matter-of-factly about kids who score two and three grades above norm—and fret over transfers from other schools, even those identified as “gifted” students, who often have trouble keeping abreast of their peers in the upper grades at Wesley.

On a typical day last winter, the halls are empty except for the signature sounds of small group direct instruction—rapid-fire question-and-response that kids often perform at the tops of their lungs, a scripted patois that is somewhere between combat training and a catechism:

“What do we call a place with lots of fruit trees?”

“An orchard!”

“Very good! We said *an* orchard because, What does orchard begin with?”

“A vowel!”

“Very good. Do we say ‘*a* orchard!’”

“No!”

“No, because, What does orchard begin with?”

“A vowel!”

The direct instruction lessons at Wesley have only two volume controls: loud and quiet. And both coexist peacefully in the same classroom. A few feet away from the high-decibel *a/an* discussion, first-graders pore over activity sheets at their desks, unflustered by the commotion, as focused as they might be in a library on Sunday morning.

“Here, students *have* to be on task. They have to be answering verbally and focused on doing their [written work] every day,” explains Brandi Scott, who joined the faculty this year after graduating from the University of Houston. Her student teaching assignments involved work not only at Wesley but also at another elementary school that she labels “the other end of the spectrum”—a mixed-age, non-graded K-2 program designed to allow students to progress at their own rate. The range in ages and abilities made it impossible to make real headway with students, she remembers. “I felt that nothing was getting accomplished.”

She says the work at Wesley is demanding. Not only do the direct instruction scripts usually require teachers to ask 300 or more questions in six small-group sessions each day, they also must perform reading checks every five or 10 lessons to ensure that students achieve 100 percent mastery.

It’s a tough assignment. Teachers typically put in 10-hour days, and the principal says she can’t get out of the building Friday afternoons “without a bunch of teachers coming up and wanting to know what time the school will open Saturday.” Scott says she’s glad she had a leg up with her student teaching for this demanding assignment but is quick to add she thinks she chose the right school.

"So much gets done here," says the first-grade teacher, whose kids are now reading at third-grade level.

Those rewards are not just reserved for kids working at an accelerated clip. Susie Fisher, a third-grade instructor at Wesley, says her greatest satisfaction comes from working with non-readers, typically new transfers to the school. Like other direct instruction programs, Wesley uses performance grouping, and Fisher's current 23-student class includes 19 non-readers. Most of them didn't know all the sounds of the alphabet when they entered her doors last fall. Five didn't know *any* of the sounds.

"They were really smart kids, it's just that nobody taught them how to read," says Fisher, who often looks through their folders, mystified that other schools could pass them along so automatically. This is the sixth year she's worked with such students, using a direct instruction program called "Corrective Reading." If past years are any indication, most will leave her room reading at a third-grade level, she says. To take a group of students who might otherwise carry a learning-disabled label with them for the rest of their education and bring them so far, so fast provides a tremendous feeling of satisfaction, she says.

It's also a clear break from the sixth-grade class she taught prior to joining Wesley's faculty. "I was working with smart kids there, too, but I just felt frustrated because I didn't know how to unlock [their intelligence]" without the support of a strong, well-defined curriculum and the training that goes with it.

Paraprofessionals receive as much training as teachers at Wesley and also assume a big role in the program. Lora A. Phylow, a Title I instructional aide, often works one-on-one with marginally performing students at the school using direct instruction materials. "The structure of the program and the script help keep everybody in tune with what their role is," says Phylow, who cites instances where hard work between student and para, along with a lot of encouragement, quickly helped bring low-performing students up to par. She believes that the structured instructional approach makes great use of the paraprofessional's talents, much more so than improvised strategies.

Show Me the Data!

Often derided as an anachronistic strategy that shuns "child-centered" or "self-directed" learning for teacher directed activities, direct instruction can at least find solace in statistics. A 1996 review of 34 studies comparing direct instruction with other approaches found that the results favor direct instruction 87 percent of the time, while non-direct instruction fared better a little more than 12 percent of the time. In those cases where there was a statistically significant difference, direct instruction was favored 64 percent of the time, non-direct instruction 1 percent of the time, and the remainder showed no significant difference. Benefits for direct instruction-taught students were found in both regular and special education, elementary and secondary levels, and across academic disciplines. Follow-up studies involving ninth-grade students in East St. Louis; Flint, Mich.; and New York City found that direct-instruction students maintained a .43 grade equivalent advantage in reading achievement and a .25 advantage in math, both statistically significant. These benefits tapered off, however, when students are moved out of direct instruction and into traditional classrooms.

One of the biggest studies involving direct instruction sprang from Project Follow Through, a \$500 million federal project to assess different approaches to educating children. More than 10,000 disadvantaged students from 180 sites were involved in the assessment, which included direct instruction along with such instructional models as open education, Cognitive Oriented Curriculum, Tucson Early Education, Responsive Education and the Bank Street College model. Direct instruction outperformed all other models in language, math computation, reading comprehension and math problem solving and was the only approach that brought students close to the

50th percentile in all subject areas (the Kansas Behavioral Analysis model was the only other model to score positively on basic skills, but results were far below those of direct instruction). Students in direct instruction also scored best on measures of students' self-esteem. Ironically, approaches that emphasized student self-esteem did poorest in this area.

Sometimes a Great Fit

This impressive track record does not mean that schools and school districts should buy direct instruction materials, sit back and wait for "the magic" to begin. Educators at Wesley and other direct instruction sites caution that before there can be success, there must be a real commitment to training and a genuine buy-in by all parties involved.

Thaddeus Lott, the former principal who initiated the move to direct instruction at Wesley and now heads a network of Houston charter schools that are implementing direct instruction, stresses the importance of training to the success of the program. At Wesley, new teachers and classroom aides spend the first four to six weeks working directly with the school's instructional supervisor to fully digest the strategy. "No teacher comes to this building and just gets a roll book and a note to go to room 13," he explains.

Rimes also cautions administrators against delivering programs like direct instruction into schools like tablets from Mount Sinai. The principal's advice to administrators: "Bring a parent, a kindergarten teacher and an upper-level teacher" to visit sites, observe classrooms and let them determine if it feels right or not.

Gayle Fallon, president of the Houston Federation of Teachers, was an early, vocal supporter of the Wesley program in the days when the school's success led to allegations of cheating. Fallon's nephew currently attends the school, and she calls it a fine example of what a public education can do when it keeps a commitment to high academic standards and strict codes of conduct for *all* students. But she is quick to warn that the program is not for all teachers.

The union makes a conscious effort to go into buildings that are moving into direct instruction and explain what it involves. "It's a very different approach than many teachers are used to—almost like changing professions—and we want teachers to recognize that and have their eyes wide open" when they make the commitment, Fallon says.

Not only does the union have a responsibility to provide this information to teachers, it also has a duty to help them move into or out of the program based on their career goals. The union and administration have worked constructively in this area, and Houston teachers may transfer into or out of schools converting to direct instruction without fear of repercussions and poor recommendations, she says. Conversely, union staff and activists are always on the lookout for educators whose style and view of education are appropriate for the schools. "It's not for everyone—but for some it's a perfect fit, and we try to make them aware" of the opportunity, she says.

Certainly Rimes believes that many teachers find direct instruction to be a perfect fit. Many a time she's had teachers leave the school—only to see a full set of direct instruction materials disappear at the same time.

Systemwide Change

School clusters in districts such as Baltimore and Broward County, Fla., are using direct instruction as part of a comprehensive approach to improve learning. Early indications from both sites seem to show the experiment is working well.

In Broward, direct instruction programs have been used as part of a broad strategy to help schools identified by the state as critically low performing. Six of the initial 10 schools involved in the dis-

trict's assistance program since 1994-95 had improved sufficiently to be removed from the list last year. At these schools, the percentage of students reading below grade level dropped from 37 percent in 1995 to 30 percent last year, and the average number of office referrals also has been trimmed by about a third.

Faculty buy-in was a key to implementing the direct instruction-based improvement strategy, emphasizes Stuart Greenberg, coordinator of the program, called the Alliance of Quality Schools. At least 80 percent of faculty at each school must vote in favor of the program before it is considered for on-site implementation.

In Baltimore, an alliance of six schools this year began using direct instruction in combination with Core Knowledge—an effort to identify and detail a rigorous, coherent body of knowledge that all elementary school children should learn (see *American Teacher*, March 1997). As a field-tested, proven strategy for helping students in reading, writing and math, “direct instruction is a wonderful tool for accomplishing the goals of Core Knowledge,” explains project director and teacher Muriel Berkeley. Initial indications are that students, though direct instruction, are making good progress in acquiring the skills they will need to succeed with the Core Knowledge sequence, she says.

Resources

■ The Association for Direct Instruction publishes *Effective School Practices*, a quarterly magazine featuring implementation reports from the field and answers to problems from school-level educators. ADI also sponsors workshops, publishes books and offers other resources at a discount to members. Write: Association for Direct Instruction, P.O. Box 10252, Eugene, OR 97440.

■ A video presentation of “Research on Direct Instruction” and other materials on the program are available from Educational Achievement Systems, 319 Nickerson Street, Suite 112, Seattle, WA 98109.

■ Mabel B. Wesley Elementary School, 800 Dillard Street, Houston, TX 77091.

■ Alliance of Quality Schools, 600 SE 3rd Ave. Floor 13, Ft. Lauderdale, FL 33301.

■ Baltimore Curriculum Project, 711 West 40th Street, Suite 316a, Baltimore, MD 21211.

—MIKE ROSE

Core Knowledge (CK)

Grades Covered	Elementary and Middle School/pre-K-8.
Curriculum Materials	Separate Core Knowledge Sequences—content guidelines—are available for <i>Preschool</i> , <i>Grades K-6</i> and <i>Grades 7-8</i> , detailing what is to be taught in the areas of language arts, American and world civilizations, geography, visual arts, music, math and science. A series of resource books, <i>What Your Kindergartner(-6th Grader) Needs to Know</i> , are also available from the Core Knowledge Foundation, as are lesson plans prepared by Core Knowledge teachers around the country, which are assembled and disseminated as “Share the Knowledge” materials.
Instructional Support/ Professional Development	Inservice presentations and professional development workshops can be contracted through the Foundation. It also distributes “model” planning guides and holds an annual conference with a focus on professional development, which brings together more than 1,200 teachers and administrators from around the country.
School Reform/ Restructuring Assistance	Limited assistance can be contracted through the Foundation.
Role of Paraprofessionals	To a large extent, the deployment of classroom paraprofessionals is determined at the school level. CK recommends their use as one-on-one skill-and-content tutors for new and/or struggling students, assistants in researching and developing age-appropriate materials and resources, and sources of assistance for students in completing CK schools’ many curriculum-related projects and activities.
Cost of Implementation	Variable. The costs for the curriculum sequence (less than \$25/teacher) and workshop training are modest. However, the costs of supplementary curricular materials, professional development, and the faculty release time necessary for properly implementing the program can make it more expensive. One study estimates start-up costs ranging up to \$26,000 per school. ¹
Preliminary Results	Preliminary results are encouraging, and a large-scale longitudinal study is currently under way. ² (See “Results” section, below, for a description of positive results from individual school studies.)

The Core Knowledge Sequence (CK) was designed to add content to the general skills and objectives typically found in state and local curriculum guides and provide a common core of knowledge in the early grades. Originated by University of Virginia professor E.D. Hirsch, Jr., CK is being implemented in over 350 schools in 40 states around the country. As such, it represents the first articulation of many standards-based reformers’

push for a model national curriculum, built around the idea that American schools need challenging academic standards to provide equal educational opportunity. Or, as one teacher describes Core Knowledge, “It’s like a gifted curriculum for all kids.” Designed to comprise about 50 percent of the school’s curriculum, the sequence provides a detailed listing of specific content to be taught, at each grade level, in the disciplines of history, geogra-

phy, mathematics, science, language arts, and fine arts.

Main Features

Interesting, Detailed Curricular Content—

One measure of the success of the standards movement is that virtually every state in the nation is in the process of developing or strengthening its academic standards. Districts, in turn, are attempting to translate these state mandates into curriculum guides. Unfortunately, a majority of these state and district documents are still not clear enough to be useful at the classroom level. Many focus on the skills students are to acquire rather than on the specific content of the curriculum to be delivered. Core Knowledge seeks to fill this hole by outlining the grade-by-grade knowledge that children will be taught. For example, the first-grade history sequence asks schools to: "Introduce [students to] ancient civilizations and the variety of religions in the world, using maps of the ancient world," specifically: *Egypt* (King Tutankhamen, Nile, Pyramids, Mummies, Animal Gods, Hieroglyphics); *Babylonia* (Tigres and Euphrates, Hammurabi); *Judaism* (Moses, Passover, Chanukah); *Christianity* (Jesus); *Arabia* (Mohammed, Allah, Islam); *India* (Indus River, Brahma, Hinduism, Buddha); *China* (Yellow River, Confucius, Chinese New Year).

Sequenced Presentation—Cognitive research indicates that children learn new skills and knowledge by building on what they already know. Core Knowledge's developer, E.D. Hirsch, Jr., observed that this can place some American students at a perpetual disadvantage. Children from highly educated families are exposed to a rich vocabulary and knowledge base in their formative years, enabling them to acquire additional skills and knowledge at a faster pace than their less advantaged peers. The result is an achievement gap that increases through successive years of schooling. The Core Knowledge response is to expose all students, very early, to interesting and demanding subject matter, and then to build on that knowledge, year by year, in a carefully constructed sequence. Because what is to be learned is defined clearly, teachers are better able to provide students with consistent, coordinated instruction. It is also easier to monitor whether stu-

dents have mastered what they need to know for the grade level and to intervene quickly when students need extra help.

A Common Core—Because the program stipulates exactly what is to be taught grade by grade, students advance through school on a more equal footing. All students, regardless of background or neighborhood, are exposed to a common core of learning, and the watered-down curriculum typical of many high-poverty schools is eliminated. Core Knowledge teachers also have the advantage of knowing exactly what their students have and have not learned the year before. Unlike most U.S. teachers, CK teachers don't have to waste time reteaching previously covered material or developing different lesson plans to accommodate students who already know the material or those who are far behind. Because all teachers in a specific grade level are covering the same material, they are able to work collaboratively, sharing ideas, resources and lesson plans, or even to divide up the work of developing a new unit.

Results

Although no large-scale quantitative data are yet available for this program, several studies show impressive results at particular Core Knowledge sites.

For example, recent test results from the Paul H. Cale Elementary School in Albermarle County, Virginia, indicate that the program may raise overall student scores and lower the achievement gap between advantaged and disadvantaged students. Cale is the second-highest poverty elementary school in the district, with approximately 40 percent of students qualifying for free- or reduced-price lunches. A districtwide review of 1996 scores on the Iowa Test of Basic Skills showed that the socioeconomic status of students was an extremely accurate predictor of schools' performance rankings—the higher the concentration of poor students, the lower the percentage who scored above the 50th national percentile. Only one school stood out from this trend: Cale, with almost 70 percent of students scoring above the national norm, had an achievement level that was far above prediction. According to the school's principal, "scores have consistently

gone up" over the four years the school has been using Core Knowledge, "especially in social studies, science, and math.... We are scoring well above the national norms in social studies, above the 75th percentile.... Our scores defy what you would expect."³

Another recent study demonstrated that students at the Nathaniel Hawthorne Elementary School in San Antonio, Texas, also achieved at higher than expected levels. Hawthorne—an inner-city neighborhood school with a predominantly Hispanic student population, 96 percent of whom qualify for free or reduced price lunches and 28 percent of whom are limited-English proficient (LEP)—adopted the Core Knowledge curriculum during the 1992-93 school year. According to the author of the Hawthorne study, "although Hawthorne students tend to be more at risk of failing academically than are students in the district as a whole, because of the larger percentages of economically disadvantaged and LEP students, snapshots indicate that the school has succeeded in raising achievement levels beyond the aggregate performance of all other elementary schools in the district." For example, Hawthorne students' performance on the reading portion of the 1994 Texas Assessment of Academic Skills was compared to students in the other 65 elementary schools in San Antonio. "Although district reading performance is generally consistent across grade levels with a student pass rate of about 55 percent, Hawthorne's results show a steep increase in the reading pass rate at consecutive grade levels. At Grade 3, Hawthorne's pass rate of 34 percent is well below that of the district. By Grade 5, however, Hawthorne's 67 percent pass rate far exceeds the district's 56 percent pass rate."⁴

Case Studies

Although Core Knowledge offers a challenging and comprehensive grade-by-grade curriculum sequence, its implementation support—important for successful replications in low-performing schools—is not as strong as that offered by some other research-based reform models (see "Considerations" section, below). Therefore, we offer descriptions of two promising implementation models:

The Trinity Partnership—In San Antonio, Texas, Trinity University has established an extensive

support system for the implementation of Core Knowledge. As an outgrowth of a pre-existing university-public school partnership, Trinity assisted the city's first Core Knowledge school, Nathaniel Hawthorne (see above), with the implementation of the curriculum. Over the intervening years, as approximately 20 area schools attempted to replicate the program, the university created a network to support the new implementations. Support has come in a variety of forms, such as: coordinating an active network of Core Knowledge schools; offering technical and financial support, including stipends to teachers who participate in network-related activities that extend beyond normal working hours or assigned responsibilities; helping to arrange and facilitate common planning time for grade-level and subject-area teachers; supporting and designing professional development opportunities, including pre- and inservice pedagogical and content-area training; providing access to curricular material and resources, including the creation of a Core Knowledge Technology Center; and supporting "mentorship" and train-the-trainer programs specifically designed to help with the introduction of the program at new sites.

Calvert County, Maryland—Calvert County is the first U.S. school district to implement Core Knowledge in all elementary schools. Much of the impetus for the systemwide adoption came from parents and teachers, responding to information about Core Knowledge pilot programs that had begun in three schools. According to administrators, teacher support ("buy-in") was one of the keys to the program's successful implementation, with the only resistance coming from principals. Today, all 12 Calvert County elementary schools are using the curriculum. Because of the systemwide implementation, Core Knowledge schools in the district seem to have some clear advantages. Economies of scale are achieved by having inservice training delivered for larger groups of teachers; implementation support can be delivered by a small team of central-office "teacher-specialists"; teacher networking and the sharing of experience and information across schools is made possible at the local level; scope and sequence statements, aligned assessments, and other supporting documents are prepared by experts, with teacher input; and the central office, not individual

schools or teachers, does the work of aligning the curriculum to state standards. In addition, teachers know exactly what background knowledge to expect from students who transfer from one county school to another.

Considerations

The Core Knowledge Sequence represents the first major effort to specify a common core curriculum for all American students. As such, it goes a long way toward addressing the low expectations for student performance and lack of challenging curricula that characterize many of the nation's low-performing schools. Although implementation assistance can be purchased through the Foundation, it is not as extensive as that offered by school-improvement programs specifically designed to help low-performing schools. While many of these elements currently are being strengthened, CK still lacks: extensive-enough professional development assistance; the school restructuring assistance needed to ensure that teachers share common planning time; readily-available high-quality curricular and other age-appropriate resource materials; and aligned performance standards and assessments. The program requires a lot of staff work during start-up, including extra time spent on researching, planning and writing new lessons. It should also be noted that CK was not designed to strengthen the teaching of basic skills, such as phonics—a priority need for many low-performing schools.

Nevertheless, several schools and school systems—including high-poverty urban schools—have found ways to fill these gaps on their own. Therefore, before deciding whether or not to adopt the program, it is worthwhile for schools to learn how these successful implementations have been supported. The preliminary findings of a three-year quantitative and qualitative longitudinal study of Core Knowledge offer some useful clues.⁵ According to the researchers, several factors “greatly facilitated successful early implementations”: (1) extra funding for start-up, including teacher preparation, materials, etc., (2) common planning time for teachers, (3) parental and community support, (4) site-based management, which can lead to increased flexibility in the use of resources, etc., (5) district support, (6) interest and support from staff, (7) team teaching,

which allows the burden of extra work to be shared, (8) sharing lessons and experience with teachers at other Core Knowledge schools, (9) assistance in finding materials, and (10) local adaptations that help serve schools' specific needs.

At the same time, researchers also detailed the benefits of Core Knowledge: (1) children gain self-confidence as they gain knowledge, (2) students connect to previously learned material, (3) students are more interested in learning and reading, (4) discipline problems decrease, (5) Core Knowledge meets the needs of all students, (6) interaction and accountability among teachers are increased, (7) teachers find their work more interesting and rewarding, and (8) parents are satisfied. The list speaks for itself.

Publications/Resources

“Common Questions about Core Knowledge,” *Common Knowledge* (Fall 1993), Vol. 6, No. 4.

“Core Knowledge Schools Take Root Across the Country,” *American Educator* (Winter 1996-97), Volume 20, No. 4.

“Why Content Counts,” *American Teacher* (March 1997), Vol. 81, No. 6.

For more information, contact: Core Knowledge Foundation, 2012-B Morton Drive, Charlottesville, VA 22901. **Phone:** 800/238-3233. **Fax:** 804/977-0021. **E-mail:** coreknow@www.comet.net **Internet:** <http://www.coreknowledge.org>

¹ Springfield, Datnow, Nunnery, and Ross, “First Year Evaluation of the Implementation of the Core Knowledge Sequence: Qualitative Report” (1996).

² Among the other studies now under way is a three-year multistate comparison of schools being conducted by researchers from Johns Hopkins University's Center for the Social Organization of Schools and the University of Memphis (see footnote 1).

³ Michael Marshall, “Core Knowledge Sequence Credited in Test Score Boosts,” *Common Knowledge* (Fall 1996), newsletter of the Core Knowledge Foundation.

⁴ Gail Owen Schubnell, “Hawthorne Elementary School: The Evaluator's Perspective,” *Journal of Education for Students Placed at Risk* (1996), Vol. 1, No. 1.

⁵ See footnote 1.

Rigorous Content for All Kids

(Reprinted from American Teacher, Vol. 81, No. 6, March 1997.)

*At Core Knowledge schools, students and teachers delight
in a demanding curriculum that challenges
common notions about what children can learn*

There's a notion among many education theorists that young children aren't ready to learn about distant lands and foreign cultures until they first know about their own community. But don't tell that to the teachers at Joella Good Elementary School in Miami.

They recount stories of first graders who, long after they've finished a unit on Egypt, construct miniature sarcophagi, turn their dolls into mummies by wrapping them in gauze and throw in some play jewels to complete the burial effect. Or third graders who know what "veni, vidi, vici" means. Or fourth graders who eagerly study the life of Ibn Batuta (a world traveler and geographer sometimes called the "Marco Polo of Africa").

Joella Good is not a magnet school, a school for gifted students or any other sort of selective school. In fact, the two-story building on a palm-tree-lined street in northwest Miami is pretty typical of schools across Dade County: diverse (about half Latino, a quarter African-American and a quarter Anglo) and crowded (1,600 students, with well over 30 kids in most classrooms and more than 40 in some). What is special about Joella Good, and a growing number of other so-called Core Knowledge schools across the country, is that *all* of its students are being taught a rigorous core curriculum that challenges many common beliefs about what young children are capable of learning. And the students love it.

"Students display an amazing enthusiasm [for Core Knowledge]," says Nancy Carrier, a resource teacher and resident Core Knowledge expert at Joella Good. "And it's always the things that people say, 'Why do they have to learn that in that grade?' Those are the things that get the kids hooked."

"I absolutely love it for the little ones," says kindergarten teacher Marguerite Sullivan. "It goes beyond just the basic skills that are in the curriculum books. It's amazing to me to see what the little ones can do with this."

It's hard not to be impressed by Sullivan's small charges as they display their knowledge in a classroom, like most at Joella Good, that is awash with colorful symbols of literacy, including nursery rhymes, books, letters, shapes and students' art. After enthusiastically explaining the meaning of such sayings as "an apple a day keeps the doctor away," "let the cat out of the bag" and "never leave until tomorrow what you can do today," the students disperse to their desks to draw pictures illustrating one of the sayings they've discussed.

A Coherent Curriculum

By next school year, when the entire Polk County, Fla., school district adopts it, the Core Knowledge curriculum will be in some 400 schools in 40 states. That's a remarkable growth since 1990, when another Florida school, Three Oaks Elementary in Ft. Myers, became the first to fully integrate Core Knowledge into its curriculum.

Japan, you can bet there aren't a lot of good textbooks out there to use. And with the rigorous curriculum, the teachers often find themselves learning about new topics along with their students.

But with a few years of experience behind them, and the support of a principal who has been willing to spend money on trade books and other resources related to the curriculum, the teachers say they've become more comfortable with Core Knowledge. "I don't know if teachers ever feel like they have everything they want," says Ellen Kornfield, a third-grade teacher and one of the school's United Teachers of Dade stewards, "but we're not hurting for materials."

Kornfield says this in the school's spacious and well-stocked library, a prime source of Core Knowledge materials. A couple of years ago, the school received a grant that freed groups of teachers at each grade level from their classes so they could undertake the daunting task of cross-referencing the Core Knowledge Sequence with Dade County's curriculum requirements, then matching the school's existing materials—books, filmstrips, videos, posters and the like—to both. For many topics, the school now has one set of books or materials per grade level, so teachers need to stagger the times when they teach that unit.

The Teacher-Para Partnership

The well-defined curriculum has also made paraprofessionals' jobs more interesting; when teachers know what they're expected to teach, they can share those expectations with paraprofessionals. "I think the paraprofessionals are doing less clerical work now and working more with children," says Rosemarie Jaworski, the school's principal.

E.D. Hirsch admits that Core Knowledge is being "unevenly implemented" across the country. Lacking extensive resources, the Core Knowledge Foundation hasn't been able to offer schools a lot of on-site guidance. Nonetheless, Hirsch says, "I am convinced that this is working in a lot of places because lots of people in those places are telling us that it's working."

"How could it not work?" he goes on, focusing on the example of student transitions from grade to grade. In a Core Knowledge school, the third-grade teacher knows what her new students studied in second grade, so she can start right in with material that builds on what they already have learned. In most schools, Hirsch guesses, that teacher might spend the first two months of the year reviewing. "That's a big percentage of the year that's just wheel spinning."

Without a control school, it's tough to compare results, but Joella Good's students perform well on standardized tests. Their scores are at or above the Dade County average in every subject and are especially impressive in science, more than a dozen points above the district mean. Teachers expect the students to do even better as more of them are exposed to the curriculum for the full six years.

On a more obvious level, there's little doubt that teachers and their students delight in Core Knowledge. "Probably three-quarters or more of the kids, if you said, 'How do you like Core Knowledge?' would have no idea what you were talking about," says Nancy Carrier, the resource teacher. "But Core is one of the things at our school that makes children like it here. It just gets them so excited about learning."

Evaluations from other Core Knowledge schools have also confirmed positive results. Researchers at Johns Hopkins University found Core Knowledge schools in Maryland outscoring control schools, even in the first year of implementation, which is unusual. In addition, the researchers note, "observations indicate often stunningly attractive student products."

Test scores from another ongoing study, by researchers at Hopkins and the University of Memphis, haven't been released, but some "qualitative findings" reinforce many of the things teachers at Joella Good talk about: students excited about learning, fewer discipline problems, increased interaction among faculty and reinvigorated teachers.

Hirsch is perhaps proudest of results, such as those from a school near his home town of

Charlottesville, Va., that show the Core Knowledge curriculum helping narrow the discouragingly widespread performance gap between low-income students and their more advantaged peers.

"It is a fundamental injustice that what American children are enabled to learn in school should be determined by what their homes have already given them," Hirsch writes in his new book, *The Schools We Need and Why We Don't Have Them*. "The public schools of a democracy have a duty to educate all students to their potential. A child's initial lack of intellectual capital is not an immutable given that our schools are powerless to change; rather, it is a challenge that schools can meet by overcoming their academic incoherence."

More on the Core

For a more detailed examination of Core Knowledge, be sure to read the Winter 1996-97 issue of *American Educator*, which includes a series of articles on the subject, including profiles of three Core Knowledge schools and interviews with teachers and students. In addition, the Fall 1996 *Educator* included a lengthy excerpt, dealing with the uses and abuses of research in education, from E.D. Hirsch Jr.'s new book, *The Schools We Need and Why We Don't Have Them* (Doubleday).

More information about Core Knowledge and the many resources for teachers is available from the Core Knowledge Foundation, 2012-B Morton Drive, Charlottesville, VA 22903; 804/977-7550. You can also visit the Core Knowledge home page at <http://www.coreknowledge.org>.

—DANIEL GURSKY

A piece of the core

More than just a list of names, places, dates and works of literature, the Core Knowledge Sequence lays out a coherent body of knowledge that all elementary school-children should learn. For each grade (K-6), the sequence include general topics and guidelines, as well as specific content in eight subjects: language arts, world civilization, American civilization, geography, visual arts, music, math and science. The entire sequence is designed to build on what students already should have covered as they move from grade to grade.

The third-grade section of the sequence covers those eight subjects in just 26 pages. Here's a small sampling (note that most of the broad topics include extensive lists of specific subtopics):

LANGUAGE ARTS

Adventures of Isabel
(a poem by Ogden Nash)

Alice in Wonderland

The People Who Could Fly
(an African-American folk tale)

Homonyms

Types of Sentences (declarative, exclamatory, interrogative, imperative)

WORLD CIVILIZATION

Ancient Rome

Byzantine Civilization

AMERICAN CIVILIZATION

Early Exploration of North America

The 13 Colonies: Life and Times Before the Revolution

GEOGRAPHY

Important Rivers of the World
Canada

MATHEMATICS

Fractions

Two-Step Word Problems

Polygons

SCIENCE

Vertebrates and Invertebrates

How the Ear Works

The Big Bang

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* These are issue titles. Requests for these issues and/or copies of articles can be sent to: *American Educator*, AFT, 555 New Jersey Avenue NW, Washington, DC 20001, or E-mail: AMEDUCATOR@aol.com

** Single copies of this publication, item no. 370, are available for \$15 from: AFT Order Department, 555 New Jersey Avenue, NW, Washington, DC 20001.

Note on Program Selection Methods

The purpose of this series of program profiles is to provide background information about research-based programs that, when properly implemented, show promise for raising student achievement significantly. For this effort, we solicited program recommendations from experts in the field and reviewed the published records of the National Diffusion Network, materials found through the library of the Office of Educational Research and Improvement, and recent research reviews. We then attempted to obtain descriptive information and copies of all published evaluations—including study designs, field test data, and replication histories—from the developers of all programs, thus identified.

All available materials were then reviewed against the following criteria:

- When properly implemented, the program helps students acquire the skills and/or knowledge they need to successfully perform to high academic standards.
- The program has been effective in raising academic achievement levels, especially for “at risk” students, based on *independent* evaluations.
- The program has been effectively implemented in multiple sites beyond the original pilot school(s).
- Professional development, materials and ongoing implementation support are available for the program, either through the program’s developer, independent contractors, or dissemination networks established by schools already in the program.

The standards by which program effectiveness was gauged are as follow:

- Evaluations demonstrate that the program can help produce educationally significant student achievement gains, as measured in effect sizes. An effect size is a standard means of expressing achievement gains and losses across studies, showing differences between experimental and control groups in terms of standard deviation. An effect size of +1.00 indicates that the experimental group outperformed the control group by one full

standard deviation. To give a sense of scale, this would be equivalent to an increase of 100 points on the SAT scale, two stanines, 21 NCEs (normal curve equivalent ranks) or 15 points of IQ (Fashola and Slavin, 1996)—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (in range with mainstream America). Because of differences among study designs and assessments, this can only be considered a “rough” measure of comparison. In general, an effect size of +.25 or more is considered to be educationally significant.

- Ideally, evaluations include findings from matched comparison or large randomly-assigned control group studies—or, failing this, compare the standardized test gains of program students to appropriate state- or nationally-normed samples.
- Evaluations include data from third-party researchers using independently-developed assessments, not only from program developers using program-designed tests.
- Evaluations include and/or compare data from multiple replication sites.

For programs in each category—in this case, schoolwide academic programs—profiles were prepared only for those that came closest to meeting the above criteria. It should be noted, however, that there may be additional programs that qualify for inclusion, but for which we were unable to locate adequate data; we hope to be able to include additional profiles for any such programs in future editions. It should be noted, as well, that in an effort to present a broader selection of programs, a few were included that did not quite meet the above criteria. Where this is the case, the preliminary nature of the data has been noted in the profile text.

And finally, both as a courtesy and as a check for accuracy, a draft of each program profile was sent to the appropriate publisher or developer for review. Any new information provided to us during this review process has been incorporated.

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Excerpts from "What Works in Education"

Editors: Judy Crandall, John Jacobson, Howard Sloane

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Statement of Problem

For over a decade there has been an immense public, political, and academic concern regarding the need for improvement in both general and special education. For both special education and regular education students it seems obvious that objective measurement of clearly defined and important academic and life skills is a critical part of their education. It not only provides teachers with information necessary to improve instructional programs, but also prepares students for future, "real world," on-the-job performance evaluations.

"Genuine educational reform requires an understanding of the difference between innovation and reform. By definition, reform entails improvement; in education, this improvement should be in the form of student learning."

Another reform trend which has characterized the last decade is the call for educators to seek "innovative" solutions. Unfortunately, innovation has come to be associated with the large-scale implementation of untried and unproven educational interventions. The National Center for the Improvement of the Tools of Educators cautions in a handbook for site councils (Oregon Education Association/OACE & the National Center to Improve the Tools of Educators, undated): *"Genuine educational reform requires an understanding of the difference between innovation and reform. By definition, reform entails improvement; in education, this improvement should be in the form of student learning."*

In the same publication, NCITE advises educational decision makers to judge the potential value of an approach by answering the following questions:

1. Are the approach and its outcome clearly defined?
2. What evidence exists that the approach is effective?
3. Is an accountability process built into the approach?

4. Is the approach sustainable?
5. Is the approach equitable?
6. Are the costs of the approach and its implementation reasonable?

Imagine the money, time, and energy that would be saved if the adoption of every educational intervention were evaluated and either adopted or rejected using these criteria? What would students and teachers achieve if we systematically implemented programs that we know work?

Programs and Procedures Included in this Monograph

Programs and procedures included in *What Works in Education* share certain things in common: They meet the criteria listed above by NCITE.

In addition, they:

- are either based on a series of replicated studies indicating educational effectiveness, or have been used in an experimental setting in which data on effectiveness was gathered
- routinely gather and compile objective standardized data on student performance on an annual basis
- routinely gather and compile ongoing criterion-referenced data based on mastery of specified learning objectives
- use this data to guide decision making about instruction throughout the school year; continuous improvement of instruction is based on collection of objective data and its analysis
- are replicable and information is available to the public about where to obtain guidelines for replication
- closely link teacher accountability, teacher training, and student performance

Reference: Oregon Educational Association & National Center for the Improvement of the Tools of Educators. (undated). How site councils help improve teaching & learning; A handbook for site councils and educational leaders on school improvement. Eugene, OR: National Center for the Improvement of the Tools of Educators.

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"Genuine educational reform requires an understanding of the difference between innovation and reform. By definition, reform entails improvement; in education, this improvement should be in the form of student learning."

Another reform trend which has characterized the last decade is the call for educators to seek "innovative" solutions. Unfortunately, innovation has come to be associated with the large-scale implementation of untried and unproven educational interventions. The National Center for the Improvement of the Tools of Educators cautions in a handbook for site councils (Oregon Education Association/OACE & the National Center to Improve the Tools of Educators, undated): *"Genuine educational reform requires an understanding of the difference between innovation and reform. By definition, reform entails improvement; in education, this improvement should be in the form of student learning."*

In the same publication, NCITE advises educational decision makers to judge the potential value of an approach by answering the following questions:

1. Are the approach and its outcome clearly defined?
2. What evidence exists that the approach is effective?
3. Is an accountability process built into the approach?

4. Is the approach sustainable?

5. Is the approach equitable?

6. Are the costs of the approach and its implementation reasonable?

Imagine the money, time, and energy that would be saved if the adoption of every educational intervention were evaluated and either adopted or rejected using these criteria? What would students and teachers achieve if we systematically implemented programs that we know work?

Programs and Procedures Included in this Monograph

Programs and procedures included in *What Works in Education* share certain things in common. They meet the criteria listed above by NCITE.

In addition, they:

- are either based on a series of replicated studies indicating educational effectiveness, or have been used in an experimental setting in which data on effectiveness was gathered
- routinely gather and compile objective standardized data on student performance on an annual basis
- routinely gather and compile ongoing criterion-referenced data based on mastery of specified learning objectives
- use this data to guide decision making about instruction throughout the school year; continuous improvement of instruction is based on collection of objective data and its analysis
- are replicable and information is available to the public about where to obtain guidelines for replication
- closely link teacher accountability, teacher training, and student performance

Reference: Oregon Educational Association & National Center for the Improvement of the Tools of Educators. (undated). How site councils help improve teaching & learning; A handbook for site councils and educational leaders on school improvement. Eugene, OR: National Center for the Improvement of the Tools of Educators.

support the implementation and maintenance of "high standards" by specifying learning outcomes, expected levels of performance, and objective measures for determining if these have been met

It is interesting to note that many of the programs/interventions were developed as many as 30 years ago and have been revised and improved continuously since their initial development.

The programs included are certainly not exhaustive and the Cambridge Center continues to solicit submissions for inclusion in future versions of the paper as this first edition goes to print.

Abstract

CLASSWIDE PEER TUTORING (CWPT)

Class Wide Peer Tutoring is an instructional strategy developed to help teachers individualize instruction, while still providing students with ample opportunity to become actively engaged during instruction. In CWPT, class members are organized into student-tutor pairs. Each earns points for completing their role competently. Students change roles during the day, sometimes performing as the student and sometimes as the tutor. CWPT provides the opportunity for students to practice and master what they are learning while encouraging positive social interaction among students. Twelve years of data indicate that at-risk students and students with disabilities in programs using CWPT acquired literacy skills at a faster rate, retain more, and made greater advances in social competency than with a variety of standard instructional methods. Need for special education placement, as well as number of dropouts, decreased.

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COMPREHENSIVE APPLICATION OF BEHAVIOR ANALYSIS TO SCHOOL (CABAS)

Using a university-based training model, CABAS provides teacher training, supervisory support and administrative support to implement a system or school-wide program for students with various dis-

abilities including visual impairment, mild to profound mental retardation, autism, learning disabilities, and emotional disturbances and has also been used to mainstream students. CABAS-trained teachers provide academic instruction and classroom behavior management based on a combination of technologies developed through scientific research in applied behavior analysis. These technologies include Direct Instruction, Precision Teaching, and PSI (Personalized System of Instruction) for staff and parent training. Instruction is individualized and based on measurable objectives. Supervisors provide teacher training and assist with data collection in the classroom. Teaching is adjusted as needed based on student performance. In a range of studies over 15 years, CABAS students made greater gains than non-CABAS students with smaller special education placement and significant cost reductions.

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EXEMPLARY CENTER FOR READING INSTRUCTION (ECRI)

ECRI provides consulting and training for individual classrooms, grade-levels or entire schools in implementing a direct instruction model in language arts. The ECRI model is applied to and adapted for existing instructional materials. From these materials structured lessons are developed to teach an integrated curriculum of phonics, oral and silent reading, comprehension, spelling, and creative and expository writing. ECRI also includes rate building, mastery learning and behavior management components. Staff receive pre-service and ongoing in-service training. Teaching is adjusted as needed based on student performance. Evaluations and validations starting in 1975 show significantly higher achievement than non-ECRI schools with the most recent national evaluation producing reading and language gains in K-12 exceeding an average of two years gain per year.

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FAIRBANKS COUNTRY DAY SCHOOL

The Fairbanks Country Day program is a K-12 private school designed to use a Personalized System of Instruction (PSI) along with computer technology for delivery of basic academic curriculum. In PSI, students study individually prescribed lessons using textbooks and supplementary materials, computer-generated exercises and mastery tests. They interact with their teachers primarily on a conference basis, receiving feedback and encouragement and additional instruction as needed. Whole-group lectures are presented as a supplement to individualized instruction. Students, teachers, and parents receive daily data on student progress and, if needed, students are provided with extra incentives and instruction to maintain progress congruent with their skill levels and expected levels of performance. Teaching is adjusted as needed based on student performance. In the 1995 and 1996 evaluations, SAT scores for the total battery (reading, math, language, spelling) were from 1-4 years above grade level.

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FOUR VALIDATED EDUCATIONAL STRATEGIES

This is a summary of specific teaching strategies found useful. Each strategy has been field-tested and validated to demonstrate effectiveness. The strategies can be used across a range of subject matters.

Response cards: Cards, signs or items that are used by students to indicate their response to a question or problem presented by the teacher. Response cards allow a teacher to provide practice for all students simultaneously instead of just calling on one or two students. Evaluation indicated that with response cards well over ten times as many student responses were obtained, with higher test scores, than without response cards.

Guided Notes: Teacher prepared handouts that guide a student through a lecture with standard cues and specific spaces in which to write key facts, concepts, and relationships. Data support higher test scores when guided notes are used, and that student notes are more accurate after using guided notes.

Error Correction: The use of multiple opportunities for students to practice (respond) to materials during the acquisition phase of learning, while providing immediate feedback and error correction ensures that students don't practice errors. Error correction has been shown to improve student learning in a range of studies.

Time Trials: Following the acquisition phase of learning, used to help students build fluency, i.e., the ability to respond quickly and accurately within a given time limit and to retain learning over time. Studies have shown that time trials improve student accuracy and that students like time trials.

For Further Information:

Each of these individuals shown below can provide additional research information and/or technical assistance to schools and educators who want to learn more about the four strategies described. Areas of particular interest and expertise are identified for each person.

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WESLEY ELEMENTARY SCHOOL

The Mabel B. Wesley Elementary School in Houston, Texas, has had a school-wide Direct Instruction Language arts curriculum since 1976, and has implemented other Direct Instruction programs and other programs based on related approaches in other subject matters. Eighty-four percent of the largely African-American student body population qualify for free or reduced lunch. In spite of the sometimes severe conditions of poverty from which many of the students come, this school consistently outperforms other elementary schools within the Houston school district, including schools with students in the top SES. Through the use of Direct Instruction, students develop the foundation skills on which they can build many of the skills other programs assume students will acquire with no direct plan-

ning. They are able to move successfully from the structured learning environment of Direct Instruction to advanced lessons in thinking and problem solving and are also well-prepared to handle less structured "student-centered" environments. Comparison students show Wesley students greatly outperforming matched minority schools in the state, and outperforming state norms for all schools except in grade 5 math, where scores were equal to state norms. On standardized tests, Wesley scores at or above national norms.

For Further Information:

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A Review of *War Against the Schools' Academic Child Abuse*

by Siegfried Engelmann

Richard Nadler

BOOK REVIEW

In 1966 the AntiDefamation League of B'nai B'rith financed a little film about the "Bereiter-Engelmann Preschool," a project developed by Dr. Siegfried Engelmann at the University of Illinois. For two years, this preschool had taught reading, language, and math to ghetto four- and five-year olds.

To make the film, Engelmann gathered several of his students in the middle of their summer vacation, and filmed them unrehearsed in front of an audience of strangers. They worked problems in addition, subtraction, multiplication, and division. They worked expressions. They solved simple simultaneous equations.

The film, "Techniques for Teaching Arithmetic," was produced on the eve of federal preschool funding. "We felt that this demonstration was particularly important," Engelmann writes, "because Head Start was looming in the wings, and it was clearly moving in a direction of being nothing more than a front for public health, not a serious educational project. We saw this as a great contradiction because disadvantaged kids were behind their middle class peers in skills and knowledge.

Thus the most brilliant educator in American history launched a career in which continuous classroom success yielded obscurity, defeat, and ridicule.

"We taught reading, language, and math to our preschoolers. And they learned these subjects. They also learned to learn well and therefore how to be smart. A film showing what these kids could do might moderate what seemed to be the inevitable mandate of the Office of Economic Opportunity to designate Head Start as a 'social experience' based on the model of the middle-class nursery school. It seemed obvious that the model would not work.

"The film made no difference," he comments, "in deterring Head Start from becoming a program that

produced no real gains ... We had shown, however, that all the disadvantaged black kids we worked with could learn to read and perform basic arithmetic operations in the pre-school, and that the average IQ gain of these kids was 24 points."

Thus the most brilliant educator in American history launched a career in which continuous classroom success yielded obscurity, defeat, and ridicule. For thirty years, Siegfried Engelmann has painstakingly developed curricula that work. They are normative, in that they do not require Marva Collins to teach them, or Joe Clark to enforce them, or Bobby Fisher to master them. They are built on the assumption that all children with I.Q.'s about 80 can achieve levels of academic competence that are currently considered normal; and that children of average ability can learn much more.

Few actions in the public arena rise to the level of *conspiracy*—i.e., a conscious plot to repress public knowledge for private gain. But the systematic suppression of the work of Dr. Engelmann and his colleagues by the academic establishment, aided and abetted by political cronies and media toadies, certainly approximates that definition. Engelmann is a superlative technician in a field dominated by thieves, scoundrels, narcissists, and child abusers. *Of course they hate him.*

Two great "reform" controversies agitate education today. One involves *governance*. Who will control the schools? Should standards and finance originate at the federal, state, or local level? Should schools be private, public, or some combination thereof? Should money follow the will of the parent, or the geographical residence of the student?

The second controversy, far more obscure, involves *pedagogy*. What curriculum will be taught in the schools? How will the instructional sequence be organized and communicated?

War Against the Schools' Academic Child Abuse deals primarily with pedagogy, and indeed with a subset of that: the teaching of generative skills. Engelmann's curricula are not aimed at producing Democrats, Republicans, Christians, or Hale Boppers. They are

intelligent decisions if given space and opportunity. There were projects like the Tucson Early Education Model that promoted 'language experience' reading (which is all but identical to the 'whole-language' approach that is currently in vogue) and Cognitively Curriculum, which focused on social development. Some of the sponsors stressed 'discovery learning,' and problem solving of the type that is popular today. "Each sponsor went out with its prejudices and practices ostensibly to find out what works well."

The different techniques were pitted not only against each other, but also against ordinary Title 1 programs for "at-risk" populations. In 1976-77, Abt Associates, in partnership with Stanford Research Institute, studied the outcomes.

"Each sponsor went out with its prejudices and practices ostensibly to find out what works well."

"The results," Engelmann writes, "make a mockery of current reforms, because Follow Through clearly showed that while some approaches work well and some flop, the ones that flopped the most emphatically are still alive today, promoted vehemently by teachers' groups like the International Reading Association, the National Council of Teachers of English (NCTE), and the National Council of Teachers of Mathematics (NCTM). The approaches that did well were roughly the opposite of the romantic notions and theories espoused by these groups. The better performing sponsors presented highly structured instruction that had tight teacher-performance requirements and practices that are 'behavioral.'"

One approach stood out: Engelmann's Direct Instruction model. DI students ranked first in reading, first in arithmetic, first in spelling, first in language usage, first in overall basic skills, and first in academic cognitive skills. DI also placed first in the most subjective measure: "positive self image." The kids who *actually learned* felt better about themselves than those who were taught "how to" feel better about themselves!

Engelmann's techniques were not merely remedial. The DI-instructed disadvantaged kids placed first among at-risk populations, but so did the DI *non-disadvantaged* kids among their peers. DI ranked first in the urban site; first among English-speaking students; first among non-English speakers.

"Our disadvantaged kids performed near the 50th percentile (average) in the various subjects. The Title 1 program typically turned out kids who performed around the 20th percentile (which is 30 percentiles lower than we achieved). Some of the other sponsors beat the 20th percentile, but most didn't. The ones with the sweetest rhetoric about children's self-image, discovery learning, and cognitive processes did the worst. Some had kids below the 15th percentile."

Commented then-Commissioner of Education Ernest Boyer, "Since only one of the sponsors (Direct Instruction) was found to produce positive results more consistently than any of the others, it would be inappropriate and irresponsible to disseminate information on all the models."

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But the cover-up began immediately.

But the cover-up began immediately. "Heavy-duty lobbying efforts warned politicians against telling communities that their 'child developmental' Follow Through model was a bust. After all, the parents loved it and thought it was great for their kids; the district loved it and didn't really care whether it was good for their kids so long as it brought in the federal dollars."

Over Boyer's objections, ineffective approaches were promoted; Direct Instruction was buried. "We survived the thundering silence that followed several esoteric debates about whether Follow Through actually happened," wrote Engelmann. "We watched what we had spent years cultivating in sites like Providence, RI, and Smithville, TN, revert to the weed patch from which it sprang. We saw the districts we had worked with erase their memory banks and look to new theories about child development ..."

"After all these years, I'm still not sure I understand why it was so important for the establishment to discredit Direct Instruction. It's true that we do not do things the way they do it in traditional class-

rooms. But what we do works, and what they do doesn't."

The Method

Almost alone among contemporary curriculum designers, Siegfried Engelmann *field tests* his programs. This cannot be said of the scores of curricula derived from the National Council of Teachers of Math (NCTM) or the National Council of Teachers of English (NCTE). Neither of these professional organizations tested their theories on a single pupil anywhere before issuing their influential dicta. Unsurprisingly, curricula derived from NCTE and NCTM criteria fail to teach English or math efficiently. "The difference between the first field-test program and the finished product you develop," writes Engelmann, speaking for himself, "is simple gritty detail, not global goop ... It is difficult to imagine how we could have such elaborate 'field-testing' of drugs, appliances, gadgets, cars, and other consumer items but have no counterpart in education."

How much time does it take to design, field-test, and revise a good curriculum? "A reading specialist who designed even one grade-level of a program that worked well *with the full range of kids*," writes Engelmann (emphasis mine), "would have to work on it no less than six hours a day for a minimum of two years."

The finished product—the super-performing curricula with which Engelmann and his associates have drawn superior results from ordinary and even sub-average students—has little in common with the publisher's product. "Oddly enough," writes Engelmann, "the amount of practice that we've had to provide to meet our goals is possibly five times the amount provided in other published programs that teach the same subject. We have also learned that kids tend to 'lose' information if we don't keep it 'alive' in the program. This observation had led us to activities that require kids to use all the important skills and concept they've been taught. We've learned that teachers do a better job of presenting material when they move faster, and that long explanations are anathema."

An Engelmann elementary curriculum is precisely scripted. It employs short explanations, followed by a series of oral questions the class answers out loud. In Chapter 14, "Systemic Change," Engelmann described what he calls a "kid referenced" system: one based on the real performance and problems of children. The first basic principle of such a system is to install only those practices and programs which have data to support the likelihood that they'll work

well. The second principle is quality control: devising sub-systems which can identify problems with specific children, specific classrooms, and specific skills quickly and in detail.

The recitation of procedures to implement such a system seems little more than an exercise in applied common sense—until one reflects that some, indeed, most, of these check-points are *absent* from our public schools:

Current and timely assessment. Quality control requires testing procedures that provide "accurate and timely assessments of each child" in each subject. Engelmann's curricula assess primary students once every one-to-three weeks and high school students every four-to-six weeks. The regular assessments are used "primarily to identify problems of student performance."

The curriculum should have a strict time schedule. Well-designed programs expect children to learn particular skills at particular times. This does not preclude some tracking for ability. But within each classroom, everyone should be at the same page at the same time. "If we don't know where the teacher should be at a particular time of year," writes Engelmann, "we don't know where the kids should be. The more precise our expectations for kids of different ability levels, the more current we will be in ... respond(ing) to problems."

The instructional sequence is clearly calibrated into calendar time units. The imparting of skills should be scripted into logical units, discretely teachable in given periods of classroom time.

The program should be designed to group children homogeneously by subject. Kids should be grouped appropriately so that the material matches their level of performance. Rather than dumping children into generalized fast, slow, and average tracks on the one hand, or mixing kids of different attainment in every classroom, schedules should allow "cross-class" grouping in major subjects. "All classrooms in the primary grades," Engelmann writes, "would teach arithmetic at the same time, so that kids from various classrooms could work in relatively homogeneous ability groups." And the same would apply to math and science—with the flexibility to group students differently in different subjects, according to their aptitudes and attainments.

The program must have assessments, projections and schedules which will teach all children. If half the children are failing—indeed, if ten percent fail—the program is a failure. "There is little point in projecting where the kids should be after four months of instruction if the projection can be achieved

by only a small percentage of teachers and students. If the assessments of what students have learned reveals only that students have many problems, the assessment instruments become relatively useless. This last feature distinguishes Engelmann's system. It is *normative*, or, as Engelmann says, it can be taught by the *average* teacher with *reasonable* (i.e., attainable) amounts of training, to all students.

Engelmann never attributes school failure to social causes, race, income level, the marital status of the parents, or the inability of students. When kids don't learn, he tells us, it is because schools don't teach.

The whole system Engelmann describes is designed rapidly to locate specific problems with specific students in specific subjects. But to make it work, the problems identified must be solved. To do this, Engelmann has used "trainers"—each an expert in the curriculum. The trainer, familiar with the instructional sequence, knows on any given day what the kids should have mastered. By examining the assessments, she knows what the kids actually have mastered. A trainer "would spend at least 70 percent of her time in contact with teachers, either in the classroom or in inservice sessions that focus on specific difficulties teachers are experiencing. The trainer would be expected to work individually with teachers on specific problems..."

Responsibility

The hallmark of this system—the basis of 30 years of successful Engelmann curricula—is what he calls *nested accountability*. "The teacher is responsible-accountable for the performance of all her students. The principal is responsible-accountable for the performance of all her teachers, all her students. The trainer (who may service between 3 and 5 schools) is responsible for all her principals, all her teachers, all her students. The assistant superintendent is responsible for all her trainers, all her principals, all her teachers, all her students."

Engelmann never attributes school failure to social causes, race, income level, the marital status of the parents, or the inability of students. When kids don't learn, he tells us, it is because schools don't teach. All the components of his system "are referenced to the single purpose of responding intelligently to the problems that kids are experiencing

and to assuring that all are being taught effectively. The system, therefore, is completely accountable because all of its assumptions are related to school practices ... Failures are assumed to be created by failures within the delivery system."

Shattered Myths

Educational theory—"global goop" as Engelmann sometimes terms it—has displaced curriculum in the schools of education which train both teachers and administrators. "The unfortunate aspect of the energy educators spend on theories is that it represents a greatly displaced effort," Engelmann writes. "The theory assumes the pose as the 'generator' of important practices and techniques. Actually, the theory provides very general rules, not the specific detail needed for designing lesson 12 of a curriculum."

This is not to say that Engelmann disregards theories—especially those which lead to stupid curricula.

One of these is the "whole-language" approach to reading, recommended by the National Council of Teachers of English. The theory, Engelmann writes, "is based on the questionable notion that language is a whole, and that learning to read will happen if you just immerse kids in language."

Kenneth Goodman, long-time president of the International Reading Association, champions this whole-language. In the influential tract, "Twenty Questions About Teaching Language," Goodman wrote, "Early in our miscue research, we concluded that a story is easier to read than a page, a page easier than a paragraph, a paragraph easier than a sentence, a sentence easier than a word, and a word easier than a letter. Our research continues to support this conclusion, and we believe it to be true ... [We] can teach children letter names and the sounds letters represent and we can teach them words in isolation from the context of language, but we know that these methods do not lead children to reading." Engelmann responds:

"If the Goodman 'hierarchy' of difficulty is accurate, we would expect to find some kids who have what might be called the 'Goodman Syndrome.' These kids would fluently and accurately read stories, but when asked to read a page, they would tend to make more mistakes. These kids would stumble miserably over individual words and would have incredible trouble following directions to identify individual letters. I've seen lots of kids who have reading problems, but never one with the 'Goodman Syndrome.'"

Engelmann's incredulity is unsurprising. During Project Follow Through, his phonics-based Direct Instruction outperformed whole-language techniques in imparting reading, spelling, writing, and comprehension skills.

"Possibly the most fascinating aspect of arguments presented by the Goodmans and other whole-language advocates is that nobody laughs at them," Engelmann writes. "An obvious reason for accepting such stupid arguments is that they handsomely serve educators. The whole-language 'reform' requires exactly no professional responsibility from teachers, because there is no bottom line ... The credulous teacher who provides the choice, the flexibility, and who encourages the 'integration' the Goodmans demand discovers that a third of her little guys can't read—although the Goodmans assure us that learning will take place. The teacher has met all the requirements for 'natural language development.' The only possible conclusion is that those kids who didn't learn have something wrong with their natural processes, or they just aren't 'ready'..."

Engelmann never attributes school failure to social causes, race, income level, the marital status of the parents, or the inability of students. When kids don't learn, he tells us, it is because schools don't teach.

"A fourth-grade teacher who had been using whole language with lower-performing kids told me this: 'My kids just love books. Of course, they can't read, but they love them.'"

"That teacher probably gave the best of all possible reasons for the wholesale acceptance of whole language. It provides an infinitely elastic standard that transforms obvious failure into success: 'My kids just love books.'"

Another highly regarded fraud whom Engelmann takes pains to expose is Lauren Resnick, whose views on math influenced the National Council of Teachers of Mathematics. The NCTE curriculum emphasizes manipulatives (physical objects) and group learning over paper-and-pencil skills; it prefers open-ended questions over specific-answer problems.

Engelmann cites Resnick's influential essay "Teaching Math as an Ill-Structured Discipline."

"Good readers," Resnick writes, "... do more elaboration and questioning to arrive at sensible interpretations of what they read ... good reasoners in political science and economics ... and good science problem solvers ... all tend to treat learning as a process of interpretation, justification, and meaning construction ... [We] need to take seriously, with and for

young learners, the propositions that mathematical statements can have more than one interpretation, that interpretation is the responsibility of every individual using mathematical expressions, and that argument and debate about interpretations and their implications are as natural in mathematics as they are in politics or literature."

Engelmann comments: "Resnick is trying to argue from 'language' to math, but it won't work because statements of math are basically different from those of 'language.' The question 'Where is man?' has thousands of possible answers because there are thousands of possible settings for the man. The questions: 'How many plus two equals six?', 'Four plus how many equals six?', and 'Four plus two equals how many?' have only one answer each (in base 10 systems). Math ain't language."

Resnick further confuses the infinity of applications of a mathematical formula with "an explosion of interpretations"—something quite different.

The particular mischief which derives from Resnick—and from "cognitive" theoreticians like Jean Piaget, whose thought dominates education reform in Missouri—is that curricula should be constructed with open-ended questions so that topics can be revisited at different times at deepened levels of comprehension. Sometimes called "spiral" curriculum, sometimes called "rich" curriculum, open-ended expectations play havoc with everything that Engelmann has learned during 30 years of designing programs that work.

Engelmann contends that virtually all student error is logical—a response to teaching that doesn't impart specific skills or specific knowledge. For example, the kindergarten teacher who drills her students to say "cow," "deer," and "horse" by rote from cue cards combining pictures and words may find that the children will continue to repeat the sequence "cow," "deer," and "horse" when the pictures are removed and the words are scrambled. As the skill was taught, the students could give a "correct" response without learning the words at all. From such "look-say" teaching, they might logically conclude that what was "correct" was the particular sequence of animal names, or the accurate identification of the pictures, or the number of letters in each word, or a visual peculiarity of the first letter In developing effective primary curriculum, Engelmann had to carefully purge the instructional sequence of ambiguities that confused kids as to what was being taught—precisely the ambiguities Resnick promotes.

Revisiting imprecise curricula also plays havoc with skills practice. Cognitive educators endorse a

"spiral" curriculum, in which themes are revisited every 60 days, or every 120 days, or every year, ostensibly with deepening understanding as the child's mind develops. Engelmann, the educator who *field tests* his work, demurs. Rather, a concept, once introduced, must be intensively practiced, and constantly integrated with new materials.

Curricula based on the work of Resnick, Goodman, Piaget, and other "cognitive" educators do not teach problem solving: *they teach errors*. Most tragically, their pedagogy shoves less gifted students ever further behind. Engelmann cites whole-language instruction as an example, where "some kids may learn to read (nothing is preventing them from learning what they're supposed to learn), [but] some higher performers may totally misinterpret the game, and lots of lower performers fail to catch on to what reading is."

***War Against the Schools' Academic Child Abuse* is the most important lay book ever written on the subject of pedagogy, precisely because pedagogy is the most neglected portion of the school debate.**

Dr. Engelmann also criticizes catch-word conservatism in education. *Correct* theory can be contraproductive when it draws attention away from the details of well-designed instruction. "Traditional educators," he writes, "express opinions through metaphysical arguments that revolve around the categories they understand; but the real issues—those that make the difference between a program that works and one that founders—are very picky, precise, technical matters ... Phonics works better than sight reading. But that doesn't imply that all phonics programs are good. It all depends on the details of the program."

What Goes Around ...

War Against the Schools' Academic Child Abuse is the most important lay book ever written on the subject of pedagogy, precisely because pedagogy is the most neglected portion of the school debate. Every week, another book on school governance is published, advocating more involvement by the parent, or more involvement by the state. Every week, more books analyze, with varying perspicu-

ity, the deficiencies of current public school practice. But the field-testing of curriculum, the sequencing of lesson plans, the amounts of skills practice and repetition, the design of segues and tests, the "back-up" plans for failure—these are lost in the global obsessions of the contestants.

Right now there exists a body of knowledge that could transform the education of every underperforming school in the country within three years. It has been extensively field-tested over the whole range of contemporary familial and socioeconomic variables among students exhibiting a full range of ability, ethnicity, and linguistic background. It is less expensive than the direct cost of current faddish failures. And it is being implemented almost nowhere.

"To stop this insanity and to create and educational system that is scientific, sound, and product oriented ... there is only one possible stopper, which is an informed public.

"The expression, 'What goes around comes around,' does not apply to education today," writes Engelmann, "because there are no 'stoppers' within the system—no segment that marks where the buck will stop, no segment with solid knowledge about what is reasonable. The trends over the past three decades have clearly demonstrated that in education what goes around simply goes around, until it runs out of gas. The new math came and it went, leaving teachers, parents, and kids with a bad taste in their mouth. The disadvantaged were bused from here to there and back, and the performance of the schools dropped to a new common denominator. The humanistic emphasis of the '70s resulted only in teachers teaching less and suggesting that it was more significant. New trends follow old ones. When a trend fails, the educators simply deprecate it, offer a new solution, and the press presents it as some new breakthrough in learning or understanding.

"To stop this insanity and to create and educational system that is scientific, sound, and product oriented ... there is only one possible stopper, which is an informed public. Unfortunately, the public is far more informed about Neptune and the ocean floor than it is about the schools. In fact, the more people read about education, the more they become indoctrinated by the theories and approaches that are at the heart of the schools' failure." ♦

War Against the Schools' Academic Child Abuse is available through ADI. See page 80 for ordering information.

CONTRIBUTOR'S GUIDELINES

Effective School Practices provides practitioners and decision-makers with the latest research and development news on effective teaching tools and practices. The journal emphasizes practical knowledge and products that have proven superior through scientific testing. Readers are invited to contribute to several different columns and departments that will appear regularly:

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 membership

SUCCESS STORIES: Send your stories about successful instruction. These can be short, anecdotal pieces.

PERSPECTIVE: 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.

RESEARCH STUDIES: Present data from your classroom or the results of scientific research. The data should guide other practitioners and decision-

makers in evaluating alternative options for school reform.

TRANSLATING RESEARCH INTO PRACTICE

Integrate a larger body of empirical research into a defined practice that can be implemented in schools.

BOOK NOTES: Review a book of interest to members.

NEW PRODUCTS: Descriptions of new products that are available will be featured. 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.

LIST OF DEMONSTRATION SITES: We wish to maintain an on-going list of school sites with exemplary implementations and impressive student outcomes. Submit the name of the exemplary school or classrooms, the names of the programs being implemented, and contact information so that visitations may be arranged.

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.

MANUSCRIPT PREPARATION

Authors should prepare manuscripts according to the third revised edition of the *Publication Manual of the American Psychological Association*, published in 1983. Copies may be ordered from: Order Department

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Send an electronic copy, if possible, with a hardcopy of the manuscript. Indicate the name of the word-processing program you use. Save drawings and figures in separate files. Electronic copy should replace text that is underlined according to the APA format, with italic text.

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:

Bonnie Grossen, Ph.D.
Editor, *Effective School Practices*
PO Box 10252
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Acknowledgement of receipt of the manuscript will be sent by mail. Articles are initially screened by the editor for content appropriateness. Then 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.

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What Was That Project Follow Through?

Effective School Practices, Winter, 1996, Volume 15, No. 1

ABSTRACT: Find out about the largest, most expensive educational experiment in history. What were the results? Why weren't they publicized? In the history of education, no educational model has ever been documented to achieve such positive results with such consistency across so many variable sites as Direct Instruction.

Planning for a Direct Instruction Implementation

Effective School Practices, Summer, 1995, Volume 14, No. 3

ABSTRACT: A workbook and guidelines provide a framework for planning a Direct Instruction implementation. The planning stages include: 1. Feasibility planning (Does the school have the support and resources to begin a DI implementation?), 2. Setting specific school policies (What policy changes regarding grouping and scheduling, report cards and discipline, inclusion and evaluation, substitutes and so on, need to be made?), 3. Deciding on the scope of the first year's implementation (Given the support and limitations, what level of implementation should the school schedule for the first year?), 4. Budget planning (What will the DI implementation cost?). A full set of placement tests for *Reading Mastery*, *Reasoning and Writing*, *Spelling Mastery*, and *Connecting Math Concepts* are included. The planning guide is particularly appropriate for the school administrator or leader.

Handbook for Grassroots Reform

Effective School Practices, Winter 1995, Volume 14, No. 1

ABSTRACT: An article by Russell Worrall and Doug Carnine describes the problem to solve: the irrationality of top-down educational decision-making. Individual school communities that wish to use a more rational process are provided with reference materials and guides for establishing bottom-up reform, particularly in the selection of the teaching practices and tools (textbooks, technology, media, software, and so on). A Handbook for Site Councils to use to improve schools guides local site councils in obtaining reliable information about what works, that is, site councils should select validated practices and tools or cautiously monitor the implementation of unvalidated practices. Reliable information is usually available in the form of research studies. Because research is often misused and abused, a guide for using research to identify

superior teaching practices and tools is also provided.

Twenty Years of Effective Teaching

Effective School Practices, Fall 1994, Volume 13, No. 4

ABSTRACT: Two keynote addresses by Sara Tarver and Jean Osborn at the summer conference provide an overview of the history of Direct Instruction. Headline news articles featuring Direct Instruction and/or disappointing results from trendy approaches are reprinted. An exchange of letters between a Montana parent and the National Council of Teachers of Mathematics highlights issues regarding school adoption of unproven, faddish methods, textbooks, and philosophies. The NCTM is unable to provide evidence that the teaching methods they promote improve learning. NCTM claims there are no measures that assess the kinds of outcomes they wish to achieve. They expect to have a guide for assessment published in 1995, 4 years after the guide for teaching practice was published. The Montana parent argues that the assessment should be used to evaluate the practices before they are promoted nationwide.

OBE and World Class Standards

Effective School Practices, Summer 1994, Volume 13, No. 3

ABSTRACT: This issue is a critique of outcome-based education. Criticisms from educational researchers and from the American Federation of Teachers are featured. Positive suggestions for education reform legislation are offered, as well as some guidelines for evaluating standards. The standards of most states are criticized for their lack of rigor, for their non-academic focus, and for their evaluation systems that do not provide information regarding the effectiveness of the school programs, but rather only evaluate individual students.

Achieving Higher Standards in Mathematics

Effective School Practices, Spring 1994, Volume 13, No. 2

ABSTRACT: The standards from the National Council of Teachers of Mathematics prescribe teaching practice more than they set standards for student performance. Several research articles provide evidence that the NCTM teaching practices are probably not the best practices for achieving the student performance standards implied in the standards.

Beginning Reading Instruction

Effective School Practices, Winter 1994, Volume 13, No. 1

ABSTRACT: Research still shows that systematic phonics instruction with a code-based reader are important components of effective initial reading instruction and are not incompatible with most whole language activities. Read Keith Stanovich's analysis of reading instruction issues in *Romance and reality* and Patrick Groff's review of *Reading Recovery* research. Read how a highly successful school teaches reading to Spanish-speaking children. Edward Fry also provides a set of tools for solving common reading problems.

Discriminatory Educational Practices

Effective School Practices, Spring, 1993, Volume 12, No. 2

ABSTRACT: Research has documented discriminatory effects for two popular school reforms: whole language and "developmentally appropriate practice" as it has been defined by the National Association for the Education of Young Children. This edition summarizes the research evaluating effects of these reforms on the upward mobility and learning of economically disadvantaged children, minority children, and special education children. These diverse learners in programs incorporating the popular "child-centered" pedagogies are less likely to acquire the tools they will need for economic success and have lower self-esteem than children in traditional programs.

Heterogeneous Grouping and Curriculum Design

Effective School Practices, Winter, 1993, Volume 12, No. 1

ABSTRACT: Heterogeneous grouping is a superficial and ineffective solution to the problem of discrimination in education. Equal access to education involves much more than having equal access to a seat in the classroom. This edition presents research summaries and perspectives surrounding grouping decisions. Research finds subject-specific homogeneous grouping most effective in subjects that are skills-based, such as reading and mathematics. The reprinted education survey by the *Economist* compares educational systems around the world and finds America's attempt to provide equal education for all a failed experiment. The *Economist* praises Germany's ability to turn out the most highly skilled workers in the world. Both *Forbes* and the *Economist* criticize many of the currently popular American reforms, such as whole language and heterogeneous grouping, for the mediocrity they seem to encourage.

Listing of Effective Programs

Effective School Practices, monograph, 1993, also *ADI News*, Volume 11, No. 5.

ABSTRACT: This issue features a complete annotated listing of Direct Instruction, programs authored by Zig Engelmann and his colleagues. Also included are procedures for obtaining funding, addresses of funding sources, and a model proposal.

Wholistic Approaches

ADI News, Summer, 1992, Volume 11, No. 4

ABSTRACT: Effective instruction (e.g., Direct Instruction,) provides wholistic integration of skills that have been specifically taught. Wholistic programs that do not teach important component skills are inferior. A study is reported that shows that students learning from Direct Instruction programs in mathematics achieve higher scores than students learning from the new teaching standards promoted by National Council of Teachers of Mathematics. A synthesis of studies in reading shows that using Direct Instruction reading programs result in higher reading scores than whole language programs that provide no instruction in component skills, such as decoding.

ADI News, Volume 11, No. 2

ABSTRACT: This edition includes a study comparing the effects of four procedures for parents to use in teaching reading to their children. Parents using *Teach Your Child to Read in 100 Easy Lessons* (see ADI materials list for ordering information) obtained the highest reading improvement scores with their children. This edition also reports a comparison of the achievement scores of Wesley Elementary, a Direct Instruction school, with ten other schools, the results of a comparison of meaning-based versus code-based programs in California, and other reports of the effectiveness of Direct Instruction programs with special populations.

Historical Issue III

ADI News, Volume 8, No. 4

ABSTRACT: The historical series reprint highlight articles and contributions from earlier editions. The featured articles in this edition are divided into the following sections: (1) Implementation strategies and issues, (2) Direct Instruction research studies, and (3) Research related to DI's goals. Russell Gersten's response to a study that is widely discussed among promoters of the current child-directed instruction reform is reprinted in this edition. That study by Schweinhart, Weikart, and Lerner is highly critical of DI preschool programs. Gersten criticizes that study primarily for using self-report data to evaluate delinquency and for interpreting nonsignificant differences as if they were significant.

Historical Issue I

ADI News, Volume 7, No. 4.

ABSTRACT: The featured articles in this issue are divided into the following sections: (1) Introduction, (2) Research studies, and (3) Management strategies. These include a classic essay by Zig Engelmann "On Observing Learning," a high school follow-up study on Follow Through children in Uvalde TX, a meta-analysis of the effects of DI in special education by W.A.T. White, and other studies reporting the effects of DI in teaching English as a Second Language, poverty level preschoolers, secondary students, and moderately retarded children. Also included are classroom management tips from Randy Sprick and Geoff Colvin, along with a school-wide discipline plan.



Videotapes on the Direct Instruction Model

- Aren't You Special**—25 minutes. Motivational talk by Linda Gibson, Principal at a school in Columbus, Ohio. Successful with DI, in spite of minimal support. Keynote from 1997 National DI Conference. Price: \$15.00
- Effective Teaching: It's in the Nature of the Task**—25 minutes. Bob Stevens, expert in cooperative learning from Penn State University, describes how the type of task to be taught impacts the instructional delivery method. Keynote from 1997 National DI Conference. Price: \$15.00
- One More Time**—20 minutes. Closing from 1997 National DI Conference. One of Engelmann's best motivational talks. Good for those already using DI, this is sure to make them know what they are doing is the right choice, for teachers, students and our future. Price: \$15.00
- Direct Instruction in Action**—45 minutes. This tape is a series of student, parent, teacher and administrator testimonials about the use of DI, and many examples of Direct Instruction being used across the country with a wide range of learners. A good tape for anyone who needs to know what DI looks like and why it works. Price: \$45.00
- Keynotes from 22nd National DI Conference**—2 hours. Ed Schaefer speaks on "DI—What it is and Why It Works," an excellent introductory talk on the efficiency of DI and the sensibility of research based programs. Doug Carnine's talk "Get it Straight, Do it Right, and Keep it Straight" is a call for people to do what they already know works, and not to abandon sensible approaches in favor of "innovations" that are recycled fads. Siegfried Engelmann delivers the closing "Words vs. Deeds" in his usual inspirational manner, with a plea to teachers not to get worn down by the weight of a system that at times does not reward excellence as it should. Price: \$25.00
- Keynotes from the 1995 Conference**—2 hours. Titles and speakers include: Anita Archer, Professor Emeritus, San Diego State University, speaking on "The Time Is Now" (An overview of key features of DI); Rob Horner, Professor, University of Oregon, speaking on "Effective Instruction for All Learners;" Zig Engelmann, Professor, University of Oregon, speaking on "Truth or Consequences." Price: \$25.00
- Keynote Presentations from the 1994 20th Anniversary Conference**—2 hours. Titles and speakers include: Jean Osborn, Associate Director for the Center for the Study of Reading, University of Illinois, speaking on "Direct Instruction: Past, Present & Future;" Sara Tarver, professor, University of Wisconsin-Madison, speaking on "I have a Dream That Someday We Will Teach All Children;" Zig Engelmann, Professor, University of Oregon, speaking on "So Who Needs Standards?" Price: \$25.00
- An Evening of Tribute to Siegfried Engelmann**—2.5 hours. On July 26, 1995, 400 of Zig Engelmann's friends, admirers, colleagues, and protégés assembled to pay tribute to the "Father of Direct Instruction." The Tribute tape features Carl Bereiter, Wes Becker, Barbara Bateman, Cookie Bruner, Doug Carnine, and Jean Osborn—the pioneers of Direct Instruction—and many other program authors, paying tribute to Zig. Price: \$25.00
- Challenge of the 90's: Higher-Order thinking**—45 minutes, 1990. Overview and rationale for Direct Instruction strategies. Includes home-video footage and Follow Through. Price: \$10.00 (includes copying costs only).
- Follow Through: A Bridge to the Future**—22 minutes, video, 1992. Direct Instruction Dissemination Center, Wesley Elementary School in Houston, Texas, demonstrates approach. Principal, Thaddeus Lott, and teachers are interviewed and classroom footage is shown. Created by Houston Independent School District in collaborative partnership with Project Follow Through. Price: \$10.00 (includes copying costs only).
- Where It All Started**—45 minutes. Zig teaching kindergarten children for the Engelmann-Bereiter pre-school in the 60's. These minority children demonstrate mathematical understanding far beyond normal developmental expectations. This acceleration came through expert teaching from the man who is now regarded as the "Father of Direct Instruction," Zig Engelmann. Price: \$10.00 (includes copying costs only).
- Direct Instruction**—black and white, 1 hour, 1978. Overview and rationale for Direct Instruction compiled by Haddox for University of Oregon College of Education from footage of Project Follow Through and Eugene Classrooms. Price: \$10.00 (includes copying costs only).
- Corrective Reading: Decoding B1, B2, C**—4 hours, 38 minutes + practice time. Pilot video training tape that includes an overview of the Corrective Series, placement procedures, training and practice on each part of a decoding lesson, information on classroom management / reinforcement and demonstrations of lessons (off-camera responses). Price: \$25.00 per tape (includes copying costs only).

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