

EFFECTIVE School Practices

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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 (formerly *ADI News*) is a publication of 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 incorporated in 1981 in the state of Oregon for educational purposes. ADI is a non-profit, 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.

A copy or summary of the current financial statement, or annual report, and registration filed by ADI may be obtained by contacting: ADI, PO 10252, Eugene, OR 97440 (503-485-1293). ADI is registered with the state of Oregon, Department of Justice, #79-16751. Copyright © 1994 Association for Direct Instruction (ISSN 1068-7378).

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From the Field: Letters

Dear Friends:

I am humbled when I realize what an honour I received when I was selected as a recipient of an ADI award. I have not written scientific research articles; instead, I have written IEP's and letters to parents. I have not made huge, significant changes in our system; I have had my hands full keeping my students safe from the popular approaches of our present system. My students have not won scholarships and awards; they have taken only tiny but significant steps toward excellence. I have not published instructional programs; I have devised dozens of mini-instructional plans, none of which are elegant, but most of which are adequate. I have not spoken to thousands at seminars and conferences; I speak to my colleagues and to my students' parents all the time, and occasionally I have shared some of my convictions in a more formal setting at local meetings or conferences.

And then I realized that the kinds of things I do are important, if not spectacular. Because of what I know about Direct Instruction, many of my students have been able to learn and grow. There are a number of young people walking around in British Columbia who can read because I learned how to implement *Reading Mastery* and *Corrective Reading*; some can ride the bus independently because I've tried to apply the principles of DI to bus training, money counting, street crossing, table wiping, social survival skills, and anything else I've been called upon to teach. A few of my friends have seen what my students have done and have been impressed enough to find out for themselves what Direct Instruction is.

I think that perhaps I represent the ordinary educator who, without doing great and spectacular things can, indeed, make small, but thrilling changes that ultimately can improve the lives of students. As that representative, I am proud to receive this ADI award. I yearn for the well designed, field-tested programs that I can count on, but, as I face having to plan something that will allow my students to learn yet another skill that they need, I remember Zig saying, "You know about this stuff. You can teach that," and I realize that, thanks to him and all the others from whom I have learned, I can, indeed, teach. Thank you.

Sincerely,
Dorothy Ross
Terry Fox Senior Secondary School
Grades 11 & 12
3550 Wellington Street
Port Coquitlam, B.C.
V3B 3V5

Phone 941-5401
Fax 941-1777

Thank you, Ziggy!

It's been another wonderful year of teaching! I could not have said that twelve years ago.

I was failing as a teacher. I taught at a school consisting of low socioeconomic children. The method of teaching reading used the basal with a skills management component. Making its way on the scene was the Language Experience approach. I thought I was ready for the task at hand. Ha!

Having completed a four-year educational program at a well-known college in our state, as well as having supervisors from our local school system available and being filled with a lot of enthusiasm, I was ready to begin a successful teaching career. However, I found myself leaving each day asking myself what else I should do to teach these students to read. I soon found I was among a large number of teachers feeling the same way. After discussing this concern with a supervisor, she told me of a school in our system that used an approach to teaching reading that was showing positive results with the type of child I was trying to teach. It was Direct Instruction.

My entire future as a teacher changed. I became a success—thanks to DI! My present school has a small percentage of low socioeconomic students, and those were the students I worked with. DI made teaching very different! My students learned how to read. I will never forget seeing the light come on in those little eyes. As I became more experienced, I used other DI programs. However, that was just the beginning.

For the past several years, I have been a DI trainer for new teachers in our system. My status in the classroom has changed also. Now I am using DI with smart kids!! Other teachers come to my classroom to visit. Perhaps DI's successful use with smart kids will spread!

I am presently teaching a multi-age classroom of third and fourth grade students. I use DI reading to integrate reading, writing and spelling with my theme of study. For example, when studying the solar system, we read the series of stories in *Reading Mastery IV* about the solar system. The writing prompts from the skillbook served to bring writing into context. The vocabulary served as spelling words and were used in responding to the writing prompts. Students worked in groups to research solar system concepts and skills required by our state course of study. The students used the ratio strategy learned in *Connecting Math Concepts D* to calculate weight on the different planets.

I applaud *Connecting Math Concepts*. I piloted level C and have taught levels D and E. The strategies for teaching math are so logical and make learning and teaching math so easy. Nine fourth-grade students took the Stanford Achievement Test this spring. Out of the nine, two performed in the average stanines (4, 5, and 6) and seven performed in the above-average stanines (7, 8, and 9).

Thank you for the opportunity to share the good news! Our school system is coming to the realization that smart kids do well in DI! What more can I say! I am a DI advocate, tried and true.

Linda Danford
Arcadia Elementary School
Tuscaloosa City Schools
Tuscaloosa, Alabama

A Mnemonic Guide to Effective Teaching

Reprinted from Scouting, January-February, 1994, with permission.

As an associate professor of education and the mother of two Boy Scouts, I was quite flattered when asked to speak about teaching at a junior leadership training session. Then I began to panic. How could I teach teenage boys the craft and science of education in one brief session when it takes at least five years of formal education to become a novice teacher?

I decided to explain the steps of direct instruction, which is a research-based model of effective pedagogy. But knowing that the Scouts would be bored with theory and jargon, I created the following mnemonic aid:

B—Before I begin, I need your attention.

O—Objective of today's lesson is....

Y—You need to know this because....

S—See how I do it.

C—Check for understanding.

O—O.K., now try it together.

U—Understand?

T—Try it alone?

S—Summarize.

I showed how to use the steps to teach a simple know for tying shoe laces. Then the boys practiced teaching a skill of their choice to a partner.

This teaching exercise can help Scouts develop leadership skills. And it may even encourage someone to consider a teaching career.

Maryellen Cosgrove, Ph.D.
Hilton Head, SC

GRASSROOTS ORGANIZATIONS

Parents for Academic Excellence, Oregon

Mission statement: If you believe that the true goal of education should be academic progress, that new teaching strategies should be proven successful before they are implemented statewide, that parents are responsible for the well-being of their children, and that local decision making is better than top-down mandates, PAE is for you.

Membership: \$20.00

Services: Sponsors study groups, forums, seminars and meetings to enable citizens to become active in the education process of their communities; provides an informative, jargon-free newsletter; organizes lobbying efforts of interested members.

Address: Parents for Academic Excellence
PO Box 1777
Corvallis, OR 97330
(503) 745-3016

Coalition for Education Reform, Canada

Mission statement: The coalition consists of a number of independent organizations (listed below) that voice the concerns of parents, citizens, and educators about education at all levels. These concerns center on such things as a need to teach subject areas (e.g., teach reading), to have clear expectations for learning at each level, to maintain standardized testing, to administer value-for-money audits, and so on. A copy of recent resolutions can be obtained by sending \$2.00 Canadian to the Coalition for Educational Reform.

Membership: Fees range from \$15.00 to \$25.00, depending on the organization, the services you wish to receive, and level of action you want to take.

Independent organizations in the coalition include: **Educator's Association for Quality Education** (representing educators), **Ontario School Board Reform Network** (representing school board members), **Organization for Quality Education** (representing parents), **Quality Education Network** (representing parents), **Parents in Action** (representing parents)

Address: Coalition for Education Reform
3266 Yonge St.
Toronto M4N 3P6
(416) 477-5397

THE USURPERS

by Don Crawford

Entranced in childhood
by the occasional regularities I noticed repeating themselves

in the confusion that is life

hauntingly

Seeking psychologically—Occidentally learned their rarity

But then,

a tiny thing but true wizardry,

THE CREATION OF LEARNING

where there was only non-learning—in my rat!

Beating a staccato rhythm on the bar—the rat had learned!!

only because of consequences wired into his cage

only because of principles wired into his cage

the principles of the Grand wizard B.F.—created learning from non-learning!

The GRAND WIZARD B.F.

discovered an elemental regularity

manipulated it produced the unexpected,

with startling regularity

even in piano playing pigeons.

Like other followers of the Grand wizard B.F. I was drafted by my allegiance into

THE WAR AGAINST THE SLEIGHT OF HAND MAGICIANS:

who have usurped the mantle of the true wizards

The pretenders

who are masters of impressive smoke and mirrors magic

who are masters of the glitz and glitter, crowd-pleasing magic

who sneer at the regularities—as less than magical

who sneer at the regularities—as simply mundane

who casually bill for that which correlates

with that which they facilitate

and do not hesitate to claim

it also causally relates

who celebrate and obfuscate with wordy incantations fete

Cogitation, activation, schema strategy

contextual, constructivist, conceptual processing

interactive, experiential style of learning free

meta meaning, meaning made incomprehensibly

who celebrate and obfuscate with wordy incantations fete their power in the world

S-h-h-h-h-h!!

non-learning

THE MAGICIANS — cannot consistently create learning from

and THE EMPEROR — is wearing no clothes!

There are fewer regularities than we would hope,

The world is more complex than we would like,

But, "The regularities are all powerful, and worth searching for"

so suggesteth the discoveries of the TRUE WIZARDS to me.

Direct Instruction Reaches Special-Needs Students

Judy Rosenberg
Neshaminy School District, Langhorne, Pennsylvania

As a tenured and veteran teacher of special education in the Neshaminy School District in Langhorne, Pennsylvania with more than 11 years of experience, you might say I had seen it all. I used the gamut of basal reading programs and experienced varied degrees of success and frustration—until I attended a presentation on SRA Direct Instruction during an annual voluntary workshop. That presentation offered a “new” means with which to achieve a great deal of success in teaching reading to children with special needs.

Within a year, my students changed from saying “reading is too hard” and “I can’t do it” to actually volunteering to read to a “regular” third-grade class. One little girl had tears in her eyes because she was overjoyed. This was the first book she had ever finished.

Leading the Way

At first, I felt slightly uncomfortable because the Direct Instruction lessons were highly scripted and because the program was not quite in keeping with the latest educational trend—whole language.

Direct Instruction programs give the teacher with effective classroom management skills the vehicle for delivering effective education. Not only due to its content, but also because it has been scripted, field-tested, and refined.

Most, if not all, of my students had been through many basal reading programs, had low self-esteem, and were becoming turned off to school. I teach in a classroom setting and conduct some private tutoring, primarily in reading, for both regular education and special education students. Whole language is wonderful for students who already know how to decode. But for many students the goal of becoming confident, fluent readers is not attainable without systematic instruction.

Critics may say that Direct Instruction is lock-step and that students sit and respond like little penguins. My response is that the process-oriented instruction has helped children with poor literacy backgrounds figure out effective reading strategies. Direct Instruction helps all students read. I wish I could get penguins to read—I’d be wealthy as well as a famous teacher.

From Failure to Success

In 1990, I began SRA Direct Instruction with three 3rd grade non-readers and nine other 2nd and 3rd grade youngsters who were reading two to two-and-a-half years below grade level. A pretest placed them into *Reading Mastery 1*, the first of the six-level developmental program.

Direct Instruction programs give the teacher with effective classroom management skills the vehicle for delivering effective education. Not only due to its content, but also because it has been scripted, field-tested, and refined.

The students’ comprehension seemed weak, but my gut feeling was that the students had been taught an inappropriate reading process and did not have the ability to decode.

Some of the older children within the group had expressed at various times a dislike of reading. When asking them why, their response was always, “It’s too hard,” and “I can’t do it.” When tested in typical basal reading programs, the results lent credence to what they had said. It was difficult for them to pass the end-of-the-book tests.

I began with *Reading Mastery 1*, which teaches sounds and their appropriate applications. In addition, I spent about 10 minutes per day on children’s literature books, most of which I read to the group. After four months, I noticed a marked growth in the students’ reading skills and in their self-esteem.

During this time, I had one very small group still using a basal reader. Every morning as I taught *Reading Mastery*, they would be listening and watching, often expressing a desire to participate. Perhaps they sensed a new attitude among their peers. The improved self-esteem was becoming more and more evident.

The students in the Direct Instruction group were accustomed to asking for almost everything to be read to them, especially directions. Soon, my

instructional assistant noticed that "Brett" read the directions on the math sheet and "Ellie" read the directions for language. And soon, during the daily literature sessions, the students were reading with a little help from their teacher.

One day I was completing Presentation Book A of *Reading Mastery*. As I looked up, I noticed that Ellie had tears in her eyes. "What's wrong honey?", I asked. "I never finished a book before, Mrs. Rosenberg," she replied—this from a third grader who came to me in December, and with whom I worked in order to catch her up to be in this group. Guess who else was not dry-eyed?

The children seemed more surprised with their accomplishments than I was, so accustomed were they to failure.

One day I was completing Presentation Book A of *Reading Mastery*. As I looked up, I noticed that Ellie had tears in her eyes. "What's wrong honey?", I asked. "I never finished a book before, Mrs. Rosenberg," she replied—this from a third grader who came to me in December, and with whom I worked in order to catch her up to be in this group. Guess who else was not dry-eyed?

By the end of the first year, the group had completed all three of the *Reading Mastery* 1 storybooks at the mastery level, and their self-esteem was elevated as they were beginning to feel that they, too, could be good readers.

Going and Growing in Year Two

The next year, I had most of the same children in my class as 4th graders. They were again tested, and this time placed into *SRA Decoding B-1*, the Direct Instruction remedial reading program designed for students in 3rd grade through high school. I was soon to see why the program is recommended for a minimum of two years.

Those children could hardly wait to come to school each day. I was really beginning to see a transfer of skills to other reading. I don't know who was more excited, the kids or their teacher.

By spring, their self-confidence was at a high. The kids decided that they would like to read to a "regular" third grade class.

Talk about risk-taking. Wow! These kids, a few of whom were virtually non-readers, read fluently and answered questions in front of an entire class. The

class posed questions, and the readers knew the answers! My previous non-readers quickly became celebrities.

The skills were transferred to other content areas as well. During each day's science or social studies lesson, I would read aloud and the class would have a discussion. One day during science, shortly after the kids read to the other class, the children asked if they could read the textbook instead of their teacher.

I am not embarrassed to tell you that the tears ran down my face. Yes, they could read, did read, and continued to read grade-level content area books quite well, and with a minimum of assistance.

Results that Speak—and Read—Volumes

At the end of the second year, the students had completed *Decoding B-1* and *B-2*. They showed impressive growth on the *Woodcock Johnson Reading* test. At the end of *Decoding B-2*, they were reading at a 4th grade level. In September, 1992, they entered 5th grade in a Learning Support class. Some were mainstreamed for one or two subjects—quite an accomplishment.

Those children could hardly wait to come to school each day. I was really beginning to see a transfer of skills to other reading. I don't know who was more excited, the kids or their teacher.

SRA Direct Instruction is a very specific and highly structured remediation program, and its careful design is its greatest strength. The program teaches strategies to the students by breaking the subject matter down into small increments—like vocabulary, reading and comprehension—and results in accurate generalization.

First we read the words, then we learn what they mean; from this point, we can learn to write. First we walk, then we run.

My students have sprinted through the program, equipped with the fundamental skills to help them break the code of reading and comprehension, a combination of teaching which is logical and intelligent.

Students and Teachers Take Pride in Success with Direct Instruction

Walk into an *SRA Direct Instruction* classroom, and you'll be sure to note the alert, involved students. In a beginning reading instruction class, students might be sounding out words. As they complete a book, some of them might smile or even cry. Because for many of them, success is a new sensation.

SRA's Direct Instruction programs start with an important premise: Every student can learn. The lessons have been developed and field-tested to reach all students—from the ones we might lose to the gifted.

The program teaches strategies to the students by breaking the subject matter down into small increments—like vocabulary, reading and comprehension—and results in accurate generalization.

Direct Instruction works. This fact has been proven time and again. This is especially important when there are so many stories of students falling through the cracks in our educational system.

Breaking the Code

Direct Instruction, developed by Siegfried Engelmann with contributions from many other educators, begins by breaking all skills into component subskills and teaching the subskills until students fully understand them. Then the subskills are brought together and connected with the larger strategy. Every skill and strategy is taught, applied, and reviewed. Nothing is taken for granted. This is a fully integrated program that gets results.

In reading programs, beginners quickly become skilled decoders, confident in their ability to read words, accurately, fluently and automatically. With programs like *Reading Mastery*, *Corrective Reading* or *Connecting Math Concepts*, ideas are introduced at a carefully controlled rate with systematic, continuous review. Students move forward in small steps, learning and applying each concept, using each skill again and again.

Technical Assistance Survey

Direct Instruction is catching on! We want to build a network of people who can support DI implementations around the country. If you feel you might have skills to offer as a demonstration school/classroom, or as a staff development consultant, please fill out this form and return it to ADI.

Name: _____

Position: _____ School/Agency: _____

Mailing Address: _____

City, State, Zip Code: _____

Phone: (work) _____ (home) _____

- A. Which of the following do you have experience in and feel you're strong at?
For each program, circle the appropriate numbers.

	Large Group Information Presentations (overviews)	Small Group Information Presentations (overviews)	One-day Training	Two-day Training	In-class Observations, Coaching and Feedback	Scheduling and Setting Up Implementations
Reading Mastery I	1	2	3	4	5	6
Reading Mastery II	1	2	3	4	5	6
Reading Mastery III-IV	1	2	3	4	5	6
DISTAR Language I	1	2	3	4	5	6
Reasoning and Writing						
A & B	1	2	3	4	5	6
C & D	1	2	3	4	5	6
Connecting Math						
Concepts A & B	1	2	3	4	5	6
C & D	1	2	3	4	5	6
Spelling Mastery	1	2	3	4	5	6
DISTAR Arithmetic						
I & II	1	2	3	4	5	6
Expressive Writing						
I & II	1	2	3	4	5	6
Corrective Reading						
Decoding A	1	2	3	4	5	6
Decoding B1	1	2	3	4	5	6
Decoding B2 & C	1	2	3	4	5	6
Comprehension A	1	2	3	4	5	6
Comprehension B1 & B2	1	2	3	4	5	6
Comprehension C	1	2	3	4	5	6

- B. Project manager responsibility – Can you set up a school-wide implementation? (Comment on experience.) _____

- C. Programs that you would like additional training on: _____

- D. Additional comments: _____

Upon completion of this survey, please return to: A.D.I. / Technical Assistance Survey / P.O. Box 10252 / Eugene, OR 97440

Annual Excellence in Education Awards

At the nineteenth Annual Eugene Direct Instruction Conference four dedicated and deserving professionals received ADI's Excellence in Education awards.

Teacher of the Year

Mrs. Earline Alexander, recipient of the 1993 Teacher of the Year award, is a teacher at Wesley Elementary School in Houston. Wesley Elementary became famous after it was featured on Prime Time Live for its high level of success with economically disadvantaged children. Earline's colleagues rank her as one of the most successful Direct Instruction teachers in the history of Wesley Elementary. Her principal, Thaddeus Lott, points out that year after year, her pupils score in the 90th percentile on achievement tests. Mrs. Alexander demonstrates daily that schools have the potential to make even the poorest of our children perform at world-class levels.

Besides the dedication, motivation, and ability to help students achieve at new heights, Mrs. Alexander has a keen sense of humor and spirit of helpfulness that make her a joy to her colleagues. Earline Alexander's first grade classroom has been a highlight for the many educators who have visited Wesley Elementary from all over the United States. She has opened her classroom to several thousand visitors over the past few years. She wows her visitors with her pupils' amazing levels of performance and inspires them to emulate her achievements using Direct Instruction programs. This past year, she reluctantly agreed to leave the classroom in order to assume a position as a teacher-trainer at Wesley. She is currently sharing her knowledge and expertise with the entire staff at Wesley.



Earline Alexander, first grade teacher at Wesley Elementary School in Houston, Texas, working with Lincoln Elementary kindergartners.

Administrator of the Year

Ramon Alvarez, Jr., was the recipient of the Administrator of the Year award for his outstanding service as Principal of Woodrow Wilson Elementary School. Mr. Alvarez has demonstrated unusual courage and persistence in standing up for the needs of all children.

Approximately 70% of the student body at Wilson come from homes in which Spanish is the first language. During his first two years as principal, Mr. Alvarez was very frustrated at the large number of children graduating from Wilson who were extremely deficient in basic skills. Mr. Alvarez visited many schools that were deemed exemplary to find a program to help the children. Many times he was disappointed.

He found schools to be labeled exemplary because of what the teachers were doing versus what the children were learning. Several visits to Wesley Elementary and conversations with Thaddeus Lott, the principal of Wesley, convinced him of the viability of the Direct Instruction curriculum as a means to meet the needs of his children.

Mr. Alvarez took on the task of instituting Direct Instruction at his school with dedication. He spends virtually the entire day in classrooms. He has been known to pick up teacher books and present lessons. He has been a constant advocate of children, seeking success for all.

Researcher of the Year

Dr. John Lloyd, University of Virginia, received ADI's Researcher of the Year award. Dr. Lloyd's research has played a significant role in extending educators' awareness and appreciation of Direct Instruction far beyond the boundaries it would have otherwise reached. In many nooks and crannies of special and regular education in this country, his work (with that of his colleagues, Kauffman & Hallahan) has successfully carried the message that teaching is amenable to improvement and that improved direct teaching leads to improved learning.

Both the quality and massive quantity of Dr. Lloyd's work are impressive.

Distinguished Educator Award

For her long career of distinguished service, Dorothy Ross received ADI's Distinguished Educator award. She has taught special needs children for 22 years in Coquitlam, British Columbia. She is now at Terry Fox Senior High School. Mrs. Ross approaches teaching as a technology that requires continuous problem solving and re-evaluation. Learning tasks are analyzed, components are sequenced, instruction is planned and continuously adjusted based on

individual performance feedback. Dorothy's motto is "students do not fail to learn, rather we fail to teach." The principles of Direct Instruction form the foundation of Mrs. Ross's beliefs and practice.

Not only has Dorothy been effective with her own students, she has expanded her range of influence by sharing her knowledge and enthusiasm with many teachers who have been eager to learn from her. Her colleagues describe her as generous, dedicated, caring, and unselfish. Every year she brings a number of grateful teachers with her to the Eugene conference where she helpfully introduces them to the world of effective teaching. Teachers are overwhelmingly positive regarding her contributions to the field. As one teacher commented, "Dorothy Ross is the best thing that ever happened to this school."

To arrange a visit to Wesley Elementary contact:

Susan Rimes, Principal
Wesley Elementary
800 Dillard Street
Houston, TX 77091

(713) 697-0131

To arrange a visit to Wilson Elementary contact:

Ramon Alvarez, Jr., Principal
Woodrow Wilson Elementary School
2100 Yupon
Houston, TX 77006

(713) 523-8080
FAX: (713) 523-8356

To arrange a visit to Dorothy Ross at Terry Fox Senior High contact:

Dorothy Ross, Special Education
Terry Fox Senior High School
3550 Wellington St.
Port Coquitlam, British Columbia V3B 3Y5

(604) 941-5401
FAX: (604) 941-1777

What's Worse: An Evil Conspiracy or a Very Bad Accident?

Bob Dixon
Washington Research Institute

My topic this morning is a bit out of sync with everything else we're going to be doing this week at the 19th Annual Direct Instruction Conference. The ultimate goal of the Association for Direct Instruction is to encourage the use of the most effective and efficient instructional methods possible, as well as effective assessment and program implementation. One way or another, every session at the conference contributes specifically and concretely to that goal.

But for a while here, I would like us to give some thought to an entirely different approach to education. Let's think instead for a bit about an evil conspiracy to prevent as many children from learning as possible: an evil, hypothetical ultra-ultra right-wing conspiracy to keep the riffraff in society from bettering itself through education. Why think about that? Well, it might be interesting. But hopefully, it will provide a context for our more positive activities throughout the week.

In general, the objective of our evil, hypothetical conspiracy is to target those who are already down and out in America and Canada, and to keep them down and out.

Who is the riffraff we are targeting in this exercise? Most minorities, poor white trash, the mentally deficient, all immigrants, white or otherwise, and so on. But race isn't the principal issue; money is the issue. We know, for example, that poor Asian children perform more poorly in mathematics than black children from wealthier families. In general, the objective of our evil, hypothetical conspiracy is to target those who are already down and out in America and Canada, and to keep them down and out. It isn't that we're simply naughty; rather, we're greedy. Reducing the level of education will increase the concentration of wealth. So as we consider this conspiracy, we should all pretend that we're wealthy and that we hope to stay that way, at the expense of anyone at all.

However, although the issue is not principally race, our evil conspiracy is an outstanding way to practice racism, for those who are interested, while *appearing* to do something else altogether. The correlation between race and poverty are no accident. If we're not particularly wealthy or greedy, but we don't like minorities, then the conspiracy I have in mind will do nicely.

Our undertaking is sufficiently ambitious, regardless of motive, but it could be done by following some fundamental principles. First, let's think about some general strategies that are always useful for advancing any conspiracy. Then we can look at more specific principles for teaching ineffectively and inefficiently.

General Strategy #1: Rhetoric

Rhetoric is going to be our number one tool. In the classical sense, rhetoric is a good thing. Let's forget that. We will use rhetoric to the advantage of our conspiracy. We will NOT focus upon the literal meaning of words, but rather, will select words carefully for their emotive and connotative power.

Here are a couple of quick examples. Because we are going to push the most ineffective approaches to instruction that we can find, we sorely need names for our movement that suggest just the opposite. Words like *whole* or *holistic* are really outstanding. They suggest that anyone not in favor of our approach instead favors fragmentation. Ugh. Fragmentation. That's truly ugly. Listen. Whole. Fragmented. Whole. Partial. Whole. Incomplete.

Because we are going to push the most ineffective approaches to instruction that we can find, we sorely need names for our movement that suggest just the opposite. Words like *whole* or *holistic* are really outstanding.

This approach is basically the same as the one used by both sides in the abortion debates. "Planned

Parenthood" implies that others favor unplanned parenthood. "Right to Life" suggests that others oppose life rights. We're not doing anything new here—just following tried and true methods. To pull off this conspiracy, we'll need to think hard about all the wonderful words and phrases we can use to distract attention from what we're really doing, things such as: understanding, high level thinking, problem solving, meaningful, authentic, child-centered—stuff like that. And then we'll have to compile a list of words and phrases that we can apply to the enemy: rote, meaningless, artificial, skills (ugh, ugh), and so on.

We can use rhetoric in another way to advance our purposes. It's a common practice in English and other languages to shorten, abbreviate, or otherwise truncate many words and phrases. We do that to make our communication more efficient. For example, *laser* is far more efficient than *light amplification by stimulated emission of radiation*. Or maybe we're just lazy. It's been rumored that someone got tired of saying prefix, suffix, word base, non-word base all the time, so he coined one term to cover them all: morphograph.

Anyway, we can use this phenomenon to our advantage. For example, linguists study the fascinating and complex field of language. The languages they study are oral, but *language* is more efficient than saying *oral language* all the time. The word *oral* isn't really necessary because linguists know that when they're talking about language, they're talking about oral language.

A related phrase is *written representation of language*. That phenomenon is by no means common to all humans. Written representations did not develop naturally for the majority of languages spoken in the world. Today, most languages *do* have written representations, but only because anthropologists and missionaries have developed them—not the native speakers.

What's this little philological journey about? Well, the phrase *written representation of language* has been shortened to *written language*. We can use that in our conspiracy. I'll explain how a bit later.

General Strategy #2: Capitalize Upon Unabashed Ridiculousness

This general strategy derives from a truism: the biggest lies are the most easily believed. In our conspiracy, we are going to push for the most ineffective and inefficient methods of teaching that we can identify. Those methods, therefore, might be perceived by many as ridiculous. THAT'S GREAT! The more ridiculous, the better. All we have to remember is that when being completely, unbelievably ridiculous, we

must keep a straight face. If we act as if we were dead serious, we'll be believed by many, many people. That is exactly the strategy of sociopaths: they are so sincere that they make us feel like WE are the ones who might be nuts, not them. I'll suggest ample examples of this strategy a bit later.

General Strategy #3: Be Politically Correct

Our conspiracy is ultra-right-wing—ultra, ultra, ultra. We'd put Rush Limbaugh to shame. But on the other hand, many educators tend toward the moderate-to-liberal range. Therefore, we will characterize everything we do as moderate-to-liberal, and anything else as reactionary. This strategy is of particular importance for the dedicated racists among us. Overt racism isn't particularly popular—among educators, at least—and can on occasion be somewhat dangerous. A good racist, therefore, should put up a good front.

General Strategy #4: Always Paint the World Black and White

There are good guys and bad guys, right and wrong. There are not ten or five or two right ways to do anything: just one. And that is OUR way. There are billions of wrong ways, and anyone who isn't wholly for us is against us, because such people advocate one of the wrong ways. When we add ideological fervor to this approach at the least, and preferably religious fervor, it works magnificently.

We've all seen the most common manifestation of this approach at work, which I will call the "if not A, then B" approach. In education, it goes like this.

1. Find the worst, ugliest examples of education and describe them in all their gory detail, keeping in mind the rhetorical principles we discussed earlier: rote, lock-step, cookie-cutter, and so on. *Make up* any examples we actually can't find somewhere.

2. Generalize this to everything other than what we are going to advocate in our conspiracy, and then press for one label to make the generalization credible. "Traditional" always seems to work well in education. (We in education don't seem to give the same deference to tradition as Tevya in *Fiddler on the Roof*.) The now all-encompassing "traditional" approach becomes Method B. We advocate Method A. When someone advocates anything—anything at all—that is not consistent with our method, we charge them with being advocates of the evil, ugly, traditional approach. We say, in effect, "It's not method A, so it has to be method B. It's not our liberal, enlightened approach, so it has to be an ultra right-wing, traditional approach." If not A, then B. Very effective. The best defense is a good offense, so because we are the evil conspirators, we will come

out swinging and accuse everyone else of being evil conspirators.

Let's review our general strategies.

1. We're going to use rhetoric to our best advantage.
2. We're going to propose ridiculous teaching methods with a perfectly straight face—the biggest lies sell the best.
3. We're going to push the idea that we're very liberal and progressive, just the opposite of our true colors.
4. We're going to argue that anyone who opposes us is not just wrong, but evil, stupid, and reactionary.

It's not our liberal, enlightened approach, so it has to be an ultra right-wing, traditional approach.

Now the job is to take those general conspiracy strategies and apply them specifically to education. We need some specific principles for ensuring the success of our conspiracy, some specific means for converting our general strategies to action. Here are my suggestions.

Principle #1: Identify Ineffective and Inefficient Instructional Programs

Why reinvent the wheel? Why spend hours and hours developing and testing ineffective and inefficient instructional programs? For our conspiracy, we could simply tap the wealth of such programs that have been produced in North America and abroad, beginning with Socrates.

One thing we could do is conduct an exhaustive research review, in which we look for the most ineffective and inefficient instructional approaches we can find. Or we could do something else entirely.

A fairly easy way to acquire information on ineffective instructional programs would be to talk a little with some eighty-year-old former teachers, people who have more or less seen it all. For example, one day a couple of years back, my sister and I were talking about approaches to beginning reading instruction. My sister was describing my nephew's whole language program at school. We were both shocked when my mom popped into the conversation; we didn't think mom could hear that well, and we didn't think she remembered much from her teaching days.

"Don't tell me they're doing that stuff again," she said with no attempt to hide her disgust.

"Whole language?" I asked.

"Call it whatever you'd like," she said, and then went on. "I was taught what you were just talking

about when I was an undergraduate at San Francisco State. They called it 'Child-centered Curriculum,' but it was the same as what Liz was just telling you. It was very progressive, very liberal."

And then mom tried to begin one of her long digressions by asserting that in those days, San Francisco State was actually more progressive than Berkeley. I pulled her back to the subject at hand.

"So what about that child-centered curriculum? Did you use it on the job?"

"I tried to," she told me, "during my first year of teaching in Grants Pass. At the end of the year, my first graders still couldn't read, and I was on the verge of quitting my job."

"So what did you do?"

She went on, "I confided my failure to the other first grade teacher, an old woman whom I assumed knew very little about progressive education. She taught me how to teach phonics during the summer, and I never had any more problems teaching first graders to read." And then she practically spat out the words, "I just can't believe they're trying that stuff in the schools again. I thought we had settled all that before the war."

There are many other ways of identifying ineffective instructional practices and programs, but based upon my experience with mom, I tend to lean toward the eighty-year-old former teacher approach. But whatever approach we use, we'll be looking for two things: (1) bad approaches to specific content areas, and (2) bad approaches to instruction across content areas.

For example, either an eighty-year-old teacher or research will tell us pretty clearly that the approaches to beginning reading that have worked the best over the years are phonics-based. Our conspiracy, therefore, needs an approach that isn't phonics based. In fact, regardless of how we teach beginning reading, we should attack phonics at every opportunity. We can't afford to let anything effective slip through.

The approaches to beginning reading that have worked the best over the years are phonics-based. Our conspiracy, therefore, needs an approach that isn't phonics based.

Also, either an eighty-year-old teacher or research will tell us that explicit instruction is effective, particularly with students who are having difficulties, and regardless of the subject area. On the other hand, the only kind of discovery learning that works very well is discovery that's so guided that for all

practical purposes, it's the same as explicit instruction, just a bit less *efficient*. So for our conspiracy, discovery is it. Not just any discovery. Pure discovery. We won't tell children about Euclid. Let 'em figure it out on their own. Let 'em discover it with sticks. Let 'em construct the knowledge for themselves, so that they really know it well. I'll bet that Euclid really understood what he was doing and no one taught it to him. That's our conspiracy pitch.

The only kind of discovery learning that works very well is discovery that's so guided that for all practical purposes, it's the same as explicit instruction, just a bit less *efficient*. So for our conspiracy, discovery is it. Not just any discovery. Pure discovery.

Another general sort of claim we can make is that children can be motivated to learn things they don't know, motivated to learn procedures they don't know. We'll teach kids to read by giving them really motivating stuff to read. We'll teach math by developing some really fun mathematics activities. This will really serve our conspiracy well. Why? Because in fact, it's impossible to motivate people to use knowledge they don't have. Impossible. Not possible.

Think about it. If you're one of us that doesn't know a great deal about auto mechanics what possible motivation could get you to adjust the valves of your car if you don't know how to adjust the valves on your car? A hundred dollars? Pride? Ten thousand dollars? A sense of accomplishment? A million dollars? You may be thinking, "For a million dollars, I'd learn." Yeah, me, too, IF we were given the opportunity to learn. But we couldn't do it if we didn't know how to do it, not for anything—period.

Are people going to buy pure discovery, or the idea that we can motivate people to do things they can't do? I think so.

Principle #2: Redefine Research

The eighty-year-old teacher approach is fine for our purposes—identifying ineffective teaching and instructional methods. But it won't satisfy all educators. We can anticipate that someone is going to ask for the research that supports our conspiracy approaches. Since we are going to advocate approaches that don't work, producing such research could be a real trick.

Let's learn from history. The child-centered curricula of the nineteen thirties didn't work, so obvi-

ously, no research could emerge to show that it did work. Much of language experience and new math in the sixties didn't work, so again, producing research to show the opposite was challenging. Why go through all of that again? True: educational fads can start and thrive for a long time without a research base, but let's be bold with our conspiracy. Let's try to keep it going for as long as humanly possible. It isn't realistic to think we can keep some educators from asking us for research, so let's just redefine research. Then, when someone asks for it, we'll give it to them. Will educators buy this, including academics? Sure. Especially academics. All we have to do is make the whole thing sound very grand and mysterious and esoteric.

We'll start by attacking research at its heart: the scientific method. Maybe we could dig up a minor principle from science, such as the Heisenberg Uncertainty Principle, and use it to our advantage. Heisenberg asserted that it was not possible to measure both the speed and direction of molecular particles at the same time because any measuring device would change either the speed or the motion of such particles. Something like that; I'm no rocket scientist. Anyway, that's good enough for our conspiracy. We can claim that the tests to measure student performance are no good because the act of administering the test changes the learner. That case will be easy to make because there are, in fact, many problems associated with testing the performance of children. Let's develop activities that effectively hide any hint of student failure, and call those activities "alternative assessment." In short, we'll throw out scientific, empirical evidence, since that is the type of evidence most likely to interfere with our conspiracy.

Now, if we're going to reject scientific research, what kind of research are we going to promote? The answer to that should be obvious: *interpretative* research. You know, case studies and the like. The advantage of interpretative research for our conspiracy is—well, you have to interpret it! That means we can interpret it any way we like, and advertise that interpretation as research.

Many educators will love this. No one particularly likes tests and testing anyway. And we educators are not widely known for our broad knowledge of science. Not only do most children display a

shocking ignorance of science, but many science teachers today do not have science backgrounds themselves. Never mind that scientific method is alive and well today, that Heisenberg has not changed the principles of scientific method one bit, that our very survival through each day is dependent upon the principles of scientific method. We can pull this off, especially if we add a bit of philosophy to make the whole approach even more confusing.

Let's get into discussions of the nature of reality—ontology—and the nature of knowledge—epistemology. Won't that turn a few heads? That will allow us to claim that even when children know something, what they know is *not real*. Take math facts, for example. A survey of personnel directors in Florida revealed that the most desirable math skills for new employees are addition, subtraction, multiplication, and division of whole numbers. What an unimaginative group, those personnel directors. Anyway, we don't want students to graduate and get jobs, for crying out loud. That's what this whole conspiracy is all about. So all we have to do is claim that skills like adding whole numbers are not real, not authentic. This ontology and epistemology stuff is great. Remember, we need to sell very big lies to pull this thing off.

Now, if we're going to reject scientific research, what kind of research are we going to promote? The answer to that should be obvious: *interpretative* research. You know, case studies and the like. The advantage of interpretative research for our conspiracy is—well, you have to interpret it! That means we can interpret it any way we like, and advertise that interpretation as research. I can illustrate this tactic with Principle #3.

Principle #3: No Teaching is Better than Some

A surefire way of keeping kids from learning something is to not teach it at all. We will try to convince people that children already know certain fundamental concepts that they actually don't know, and that they therefore do not require instruction. We'll use interpretative research to *prove* that kids know this stuff that they really don't know.

For example, let's do a case study on subtraction knowledge among four-year-old children. We present such a child with five pieces of candy. We ask the child to count the pieces. She successfully counts five. Now we take two of the pieces away, and ask her to count again. Without difficulty, she counts three. Finally, we ask, "Do you have more candy now or less?" The child says "Less." We then repeat the same steps with some other four and five-year-olds, and get the same result.

Now we interpret what happened. Our interpre-

tation—the interpretation that best serves our conspiracy—is that all those children already knew how to subtract. Therefore, obviously, it is not necessary to teach them how to subtract. Research shows it! Research shows it! Did those children really do any subtracting? Of course not, but what do we care? Remember, we're going to treat skills like subtraction as if they weren't real. Besides, our goal is simply to provide quotable, citable research that supports our position.

Here's one more example. I mentioned earlier that we could take advantage of a rhetorical quirk in language, that of shortening. Because most people use the shorter phrase *written language* in place of the longer *written representation of language*, we can make this argument: children learn oral language naturally, without schooling. Because written language is language, children can learn it naturally, too, without the benefit of schooling.

Now of course, a written representation of language is no more language than a photographic representation of a cow is a cow. But who cares? If we can sell this line of reasoning, such as it is, then we have another example of how we might influence educators to not teach. Can we sell this idea? I think we can.

How about pushing the idea that if anyone is qualified to teach at all, it's the children themselves?

In fact, I think we can convince at least some educators that the role of teachers is not to teach at all. We'll have to use our rhetoric strategy wisely for this. Let's say we develop the notion that the real role of teachers is to create a rich environment in which children can learn on their own. Better yet, let's say that in such an environment, children not only learn better, but *learn to learn*. Yes, I like that. Absolutely gorgeous words, completely devoid of functional meaning.

And here's a little twist on this idea that I really love. How about pushing the idea that if anyone is qualified to teach at all, it's the children themselves? A world of wondrous cliché will give us a good running start. For instance, "The best way to learn something is to teach it?" Oh, really? That's the best way to learn? That's the *best* way to learn? The most *efficient* and *effective* way to learn?

Anyway, we'll push the idea because it serves our conspiracy. Let me give you a very specific example. Imagine that Johnny is in your classroom. Johnny is stupid, a real dope. Since we're making this all up,

let's say he is a minority, maybe a Native Canadian living way up in the northernmost reaches of British Columbia. Johnny is in the fourth grade, and he can barely write his name, but some idiot has decided that he should be in your regular classroom. Got the picture?

Okay. We don't want Johnny to succeed, but we do want to make it look like he is succeeding. So we'll put him in a group of students that includes Mary Lou, a great little WASP girl whose father owns an oil refinery. All writing will be group writing. We'll pretend that Mary Lou is going to teach Johnny to write, knowing full well that Mary Lou is most likely to simply carry Johnny along on her back. Now here's the really good part. After the group does a writing assignment, you can fix up any problems that Mary Lou overlooked, type one copy on a word processor, print several copies, and put one in the folder of each student. Then if some nosy jerk from the government or special education or the tribe wants to see evidence that Johnny is learning something, we'll pull out Johnny's folder and say, "Look. Here's a sample of Johnny's work!"

Will anyone at all accept this as evidence of Johnny's progress? I think someone will.

Principle #4: Use Valuable Instructional Time to Teach Things Students Already Know.

This is a corollary of the last principle. We can't make our conspiracy fly by simply telling everyone to teach nothing. We have to fill the dead air time with something. In order to ensure failure, we should either fill that time with something worthless (my next principle), or with instruction on something children already know how to do.

Now, let's think a moment. Think especially about babies and toddlers. What are they really, really good at doing? What can they do naturally, with no prompting, no instruction whatsoever? I suppose answers to this could vary widely, but the natural ability of humans that really blows my socks off is our ability to solve problems. We may not always solve our problems correctly, or appropriately, but we do seem able to solve them, one way or another.

It's a problem for a baby when she gets wet and hates the feeling, or gets hungry and hates the feeling. She solves those problems. Boy, does she solve those problems. It's a problem for a toddler when another toddler plays with his toy, and he thinks there's the possibility that the other toddler wants to take that toy and keep it forever. One way or another, he solves that problem.

The entire purpose of the human brain appears to be solving problems for the host organism. Problem

solving capability is a part of original factory equipment. True, sometimes we solve our problems well and effectively, and sometimes, not. What makes the difference? Knowledge. Knowledge. Knowledge.

A family practice physician, for example, solves problems all day long. Just about any given symptom could be a sign of a trivial problem that will solve itself with the passage of time, or of a critical problem that requires immediate attention. Did that doctor spend years and years of schooling and internship and residency in classes on *problem solving*? Not hardly. That time was spent acquiring knowledge: much of it factual, much procedural, and much related to the question of when to use that knowledge.

We will urge educators to spend countless hours teaching problem solving. That really serves two purposes. First, it keeps children occupied with something they can already do. And second, it takes time away from acquiring knowledge, effectively ensuring that children will not solve problems very effectively.

You show me someone who is adept at solving problems and I'll show you someone who has a great deal of knowledge. If that person is adept at solving just certain types of problems, then he or she has vast knowledge in a limited domain. It takes me an average of two days to solve problems with my car that my mechanic can solve in a few minutes. He knows more than I do, plain and simple.

The point of this discussion is that for the purposes of our conspiracy, a curriculum based principally upon problem solving is an excellent way of achieving our goal, that of making sure that the down and out stay down and out. We will urge educators to spend countless hours teaching problem solving. That really serves two purposes. First, it keeps children occupied with something they can already do. And second, it takes time away from acquiring knowledge, effectively ensuring that children will not solve problems very effectively.

Principle #5: Use Valuable Time to Teach Students Things of Marginal Usefulness.

This ought to be fairly obvious. Keeping in mind that our goal is to prevent the sharing of wealth, for the rich to stay rich and for the poor to stay poor, we

should be able to identify those things that most reliably contribute to financial success, and then teach something else.

Reading and writing ought to be good places to apply this principle. After all, financially successful people can at least read, and many can write reasonably well. What do they read? I'm afraid I'm speculating here, but I can share what I think. Many financially successful people read *The Wall Street Journal* and *Business Week*. They read reports of various types, and journal articles. They read their local paper, and often, papers such as the *New York Times*. They read technical material that will help them learn their job, or do their job better. And they probably read—or have read—many, many textbooks.

They also read popular nonfiction, books that outsell fiction by a notable margin, books like *The One Minute Manager*. And they read popular magazines, which are largely nonfiction. If they read fiction at all, they read popular novels, *Jurassic Park* and *The Client* and the like. I base that assumption on two facts. First, only 5% of the population buys 95% of all paperback books. Second, best sellers—hold on here—are the books that sell the best! They are the books that people buy.

Do these people read classical literature? I doubt that many do, given the amount of space dedicated to classical literature in bookstores like Walden's and Dalton's and Crown Books.

Okay. Back to our conspiracy. The type of reading that people do the least is what we might call "good literature," or classical literature. Therefore, we ought to consider basing our entire reading curriculum on ... what else? Good literature. The very kind of reading that is least likely to contribute to financial success.

Our conspiratorial writing curriculum is even easier to envision: we'll focus similarly on writing fiction—stories—because that is precisely the type of writing that is likely to do students the least good. The story might very well be the most difficult genre in English. Thousands of highly educated people, voracious readers, with years of experience studying composition and literature, have attempted to write a good story and have failed. It's sad, actually. I attended a writer's workshop in Maine a couple of years ago. One of the participants was an English Professor at a well-known midwestern university, and she specialized in teaching writing and fiction. And she couldn't write a story to save her life.

Perfect. We'll keep the little duffers busy trying to write stories, knowing full well that almost every other type of writing, such as argument and persuasion, would be more useful to them in both school and adulthood, and infinitely more attainable.

Here's another example of marginally useful curricula. Of all the groups we're targeting with our ultra-right-wing conspiracy, immigrants might be the ones with whom we hope to be the most successful. Hell. They aren't even real Americans and Canadians, heh? They talk funny, and they threaten the concentration of wealth by taking jobs or going on welfare. Let's get 'em.

How? Well, people who speak English fluently and articulately, and read and write, have by far the greatest number of economic and other choices in America and Canada. Let's conspire to reduce or eliminate those choices by postponing indefinitely opportunities for immigrants to learn English.

We can accomplish that goal by applying our general strategy of being politically correct. A true liberal's heart bleeds for all the riffraff, right? Everybody is equal, all cultures are wonderful, all people are great? We can capitalize upon such foolish sentimentality by pushing for the idea that every child should be taught in his or her own native language. Think about it. It sounds great to the liberal throngs. Our premise will be that if kids are not taught in their native language, then they will sit in classes taught in English and not learn anything at all. If not A, then B. If not bilingual education, then no education at all. Never mind that there are numerous other possibilities for ensuring that those students learn fluent English, learn vital academic knowledge, and maintain their knowledge of their native language and heritage as well. That doesn't matter. If not A, then B.

Can we sell that? I'm fairly confident that we can.

Principle #6: Redefine Failure as Success

This might very well be my favorite tactic. It's brilliant. Absolutely brilliant. Sure, we can do a lot of interpretative research and satisfy the would-be scholars, but what do we do with teachers and parents who see children performing various tasks every day? Our conspiracy calls for the worst possible teaching methods. If we truly identify those methods and succeed in getting people to implement them, then a lot of kids are going to fail, and their failure is going to be awfully apparent to those around them, those who care about them. That's why it's crucial to identify common signs of failure and redefine them as success. Presto, chango.

In some quarters—very small quarters—I'm known as something of an expert on spelling. If I'm an expert, then I should be qualified to identify what constitutes failure in spelling. Sit up tall for this, because this is as profound as I get: kids who misspell an awful lot of words are failures at spelling. As you can see, I didn't study linguistics and orthography all those years for nothing.

Now let's apply this principle. Hang on again. We'll say that misspelled words are good, a sign of success. We'll make misspelling a goal! I love it. Now, when kids write and misspell lots and lots of words, we'll characterize that as a sign that our methods are working quite well. Is anyone going to buy that? Sure. Remember our strategic use of rhetoric. The word *misspelling* is ugly, ugly, ugly. Misspelling. Yuk. We need something pretty, something lofty, something with an appealing associative quality to it.

I repeat: can we sell the notion of misspellings as a positive, desirable educational outcome? I think we can.

Something like *invented* spelling? Listen to it. Invented. Invented. Invented. It conjures up images of creativity, the stuff of which writing is surely made. Isn't one of education's broad goals that of turning out creative, or inventive children?

I repeat: can we sell the notion of misspellings as a positive, desirable educational outcome? I think we can. And if we can do that, we can sell any error, any misunderstanding, any misconception as a positive, desirable educational outcome.

You figured out some time ago that I'm not really talking about a conspiracy at all. Rather, I've been talking about recent trends and fads in education. Let me say plainly, however, that I'm not suggesting for a moment that those trends are the result of any kind of conspiracy, or more generally, of any kind of conscious effort to keep kids from learning.

What we see in the current fads is not likely a conspiracy, but a very bad accident, a concatenation of events that, accidentally, has resulted in an array of practices that in effect are likely to prevent a sharing of the wealth, practices that are particularly detrimental to the cognitive development of poor children, disabled children, immigrants, minorities, children at risk of becoming poor or disabled, and an awful lot of children whom we might once have referred to as ordinary.

I'll give my answer to the question posed in my title right now. The question is, what's worse, an evil conspiracy or a very bad accident? If we just think about the *effects upon children*, it really doesn't matter.

I doubt there is a conspiracy, an evil intent. It's likely, in my view, that the faddists have good intentions. They have seen classrooms in which students labor *ad nauseam* on meaningless rote tasks. They know that's not the right way. They have seen

teachers do two math problems and then let students try doing twenty more on a worksheet. They know that's not the right way. They have seen students work endlessly on grammar and usage and spelling and handwriting, but never actually write anything. They know that's not the right way. They have seen students struggle with the most unbelievable concentration of concepts in social studies and science textbooks. They know that's not the right way. They have seen young children practically battered by elaborate punishment schemes, and they know that's not the right way.

They know what is wrong when they see it, and you and I probably know what's wrong when we see it. But here's the crux of the bad accident, as I am thinking of it: they don't know how to do it right. They don't know how to do it right. They ... don't ... know ... how ... to ... do ... it ... right. They think there is one right way, and that everything else is wrong. Black and white. If not A, then B.

They are *completely* missing the reality of instruction and instructional design: there are dozens of right ways, and billions of wrong ways, or inefficient ways. There are dozens of ways to make children smart, to give them important life choices, and billions of ways to deny them. Nothing as complex as human cognition is as simple as black and white, right and wrong.

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Now, is this accident, this group of trendy practices, really as bad as I've characterized? Haven't I exaggerated just a bit? Judge for yourself.

Let's look for a bit at the *Standards* recently published by the National Council of Teachers of Mathematics, the NCTM. There has been a lot of excitement about those *Standards*. Just about every school

district in the country has jumped on the bandwagon. The *Standards* must be politically correct: I heard Bill Clinton mention them at least three times during the presidential campaign. Everybody and their mother has endorsed the *Standards*, including prestigious organizations like the National Science Foundation.

I'm going to give you a few quotes now, quotes solely from supporters of the NCTM *Standards* or from the NCTM itself. First, Bishop (1990), a *Standards* supporter.

It is a little surprising that there is not much reference to the research literature concerning mathematics learning and teaching. There is no impression of the existence of a substantial body of research on which, for example, the proposals in [the] *Standards* are based. Recommendations and exhortations appear to be supported only by opinion—authoritative opinion, it is granted—but opinion nonetheless. (p. 366)

Well, isn't that enough? Authoritative opinion? The opinions of mathematics educators, of big guns at the NCTM? One is Robert Davis (1990) of Rutgers University, the author of an NCTM Monograph called *Constructivist Views on the Teaching and Learning of Mathematics*. Davis says:

Most readers [of the monograph], if they have heard of the "new math" at all, have heard that it was installed in a large number of US schools in the 50's and 60's, and turned out to be a failure. (p. 93)

Davis does not agree, rightfully, that there was a single, monolithic "new math." Rather, several different approaches to mathematics were grouped together as "the new math." Those different approaches differed in effectiveness: some showed promise, but most were dismal failures. But most of those disparate approaches shared a commitment to discovery learning, which has uniformly proven to be less effective than explicit approaches.

In that, "new math" turned out to be a failure. And while Davis argues against viewing new math as a uniform approach to mathematics education, he simultaneously argues that the world of mathematics instruction is black and white, bad guys and good guys. He and his colleagues (Davis *et al.*, 1990) speak of a mathematics war in the United States. On one war front,

there is major disagreement on how to proceed in order to make things better. One

school of thought would argue for "more" and "more explicit." (p. 1)

They go on to say

A different diagnosis and prescription might be said to tend in nearly the opposite direction. (p. 1)

In the same publication, Davis says

By focusing on meaningless manipulations of symbols, the typical school curriculum gives a student no effective mental symbol system that carries the basic logic of the real situation. (p. 100)

Davis contends that new math was really great, but that it simply has been misinterpreted. A major problem with new math, according to Davis, was that it lacked a formal theoretical foundation. That foundation, he says, is constructivism. And what is constructivism? I won't get into that now, but here is one fundamental principle:

Knowledge is not passively received either through the senses or by way of communication. (von Glaserfeld, 1990, p. 22)

First, I wonder how one might communicate without using one's senses, but that's a bit off the point. The real question here is: are they serious? Knowledge can't be communicated directly, explicitly?

Well, let's try it and see. I'll tell you how to spell a word that you can't spell right now. It is pronounced "kay-lee." It comes to English from Irish, and means "a gathering." Kay-lee. Kay-lee. Think about possible spellings. Okay, here goes: c-e-i-l-i-d-h. I kid you not. C-e-i-l-i-d-h. Kay-lee. Write it down if you like. Look at it. Picture it in your mind's eye. Trace it on your neighbor's knee. Do whatever you like. C-e-i-l-i-d-h. Kay-lee. C-e-i-l is like ceiling. I-d-h is sort of like, duh, but not really.

Now, have I communicated anything to you? Do you have a bit of knowledge, however tenuous, however inconsequential, that you didn't have just a moment ago? Constructivists would say you don't. The knowledge isn't real or authentic because it was communicated to you directly. That's where the ontology and epistemology stuff comes in: what is real, what is knowledge. You don't think I made that stuff up, do you?

My own mathematics education was certainly "traditional," whatever that means. I clearly remember seeing teachers work two problems on the

chalk board, then going off and working a bunch on my own. It wasn't great, and I don't recommend it to anyone. But, oddly enough, I seemed to have learned some math. I never gave it much thought until recently, when I built a playhouse for my daughter. I hadn't studied math for over twenty-five years, but somehow, I managed to calculate angles for cutting roof rafters, to determine the area of the roof and the area of shingles, all in inches, and to convert to feet, and to estimate the number of shingles needed to complete the roof.

The constructivists don't think much of this. My mathematics knowledge is not real because it was communicated to me explicitly, and because the problems I worked in school were most likely not very authentic. But my two-and-a-half-year old has a perspective that I think is instructive: the playhouse is real. It's authentic. The pitch on the roof is correct, and it's completely covered with shingles, and it doesn't leak. She is no more concerned about how I learned the mathematics that enabled me to build that playhouse than the personnel directors in Florida are concerned about how high school students learned to add, subtract, multiply, and divide whole numbers.

But I've digressed. My point is, simply, that *every* approach to instruction, *every* fad or movement that comes along, is conceived of and promulgated by "authorities." The good ones. The bad ones. All of them.

Now, what does the NCTM have to say about all of this? Well, here's a quote from the NCTM's Research Advisory Committee:

The Standards document contains many recommendations, but in general it does not provide a research context for the recommendations, when such a context is available. (Research Advisory Committee, 1988, p. 339.)

That's great. Even when there is research to support one of the recommendations in the Standards, they don't tell us about it. And then, we have to ask, what kind of research is the Research Advisory Committee talking about, when research exists at all? I quote Sowder (1989), who directed the Research Advisory Committee:

in the mathematics education research community, interpretive studies of learning and understanding are undertaken by researchers who seek not to establish decontextualized generalizations but to produce qualitative descriptions of individual cases that will lead to a better understanding of specific teaching and learning situations. (p. 19)

Interpretative research. Case studies. But don't misunderstand me. Case studies are great. They often provide many good questions for empirical study. In fact, I think it's accurate to say that Zig Engelmann began with case studies. He taught reading and math, including algebra, to his four-year-old twin boys, Owen and Kurt. But those were case studies. They didn't prove anything. The results had to be interpreted. For example, one gigantic confound in that early work was the possibility that Owen and Kurt were just a lot smarter than other four-year-olds. And you know what? I think they were.

It wasn't until Zig began working with extremely poor, certifiably low preschoolers that dependable evidence began to emerge in support of his approach. Like most researchers, then, Zig moved on from case studies to empirical investigations, directed principally by Doug Carnine. What does the Research Advisory Committee think of empirical studies? Again, I quote:

This contrasts with the still-prevalent research scheme in which ... the design of alternative instructional methods attempts to make them all alike in all ways except for a single critical variable, with the methods then submitted to a competition that is evaluated by a statistical test. (Sowder, p. 19)

Other than the obvious oversimplification, this describes scientific method, a "scheme" for conducting research. How does the NCTM get away with this? Quietly, I think. To listen to me, you'd get the impression that the people who wrote the NCTM Standards are a bunch of lunatics. But frequently, they present themselves as reasonable, objective, solid citizens. For example, the Research Advisory Committee not only concedes that it would be a good idea for someone to do research to verify the recommendations in the Standards, but also—quoting again:

to consider research evidence that might refute any of the recommendations made in [the Standards]. (RAC, 1988, p. 339.)

That would be great, if they meant it. They don't. Researchers here at the University of Oregon conducted well-designed research on the use of manipulatives. Their study showed that you could use manipulatives either before or after doing computations, and get about the same result. However, using manipulatives after computations achieved that result more quickly. It was more efficient,

something critical to all of us concerned with lower performing students. The Oregon researchers submitted the result of their work to the Journal for Research in Mathematics Education, a publication of the NCTM. The paper was rejected, and the editor said the following:

As pointed out by reviewers A and B, the tone and wording of some of your comments and suggestions do not always imply that you really believe or recommend the major shift in teaching suggested by the Standards.

Get it? If you develop strong empirical evidence that is not consistent with the Standards, it won't get published. Period. Whether or not the Oregon research was superbly designed is beside the point: you'd *never, EVER* get feedback like that from two reviewers and an editor if they had any interest at all in pursuing the truth.

But evidence that does support the Standards gets published, even if that evidence stinks. For example, in one study recently published by the *Journal for Research in the Teaching of Mathematics* (Carpenter, et al., 1989), teachers were trained for eighty-eight-zero-hours on curricular methods consistent with the NCTM Standards. Control teachers received four hours of training on something else altogether. Only the NCTM content was tested. Is all that clear enough? One group of teachers got eighty hours of training on NCTM content, and that is what their students were tested on. Another group of teachers got four hours of training on something not consistent with the NCTM Standards, and their teaching was not consistent with the Standards, but their kids were tested on the NCTM content.

You couldn't get a Masters degree from Fly-by-Night Correspondence University with that study, but it was published in the NCTM's journal. I kid you not. And what was the result? Duh. The kids of the NCTM teachers did better than the kids of the other teachers—modestly better, according to the authors of the study themselves. Modestly better...

What a bunch of dopes! If you're going to stack the deck like that in favor of your preferred method, the least you could do is get magnificent, substantial, enormous differences. Trust me. If we could train you for eighty hours on *Connecting Math Concepts*, and then your kids were tested on the program's content, and the control kids weren't, we'd get vast, colossal, monumental differences. Even if the control kids were taught and tested on the same content, we'd get stupendous, titanic differences. Not the slight, modest differences the NCTM researchers got.

In short, there are many ways in which current fads are consistent with the sorts of strategies and principles we would use if we really were interested in promoting some sort of conspiracy against diverse students.

Rhetoric? Yeah, there is plenty of that going around. I won't elaborate further.

Ridiculousness? Plenty. When Ken Goodman and his wife (1981) suggest that it's easier to read complete text than individual words or sentences or paragraphs, we know that the big lies are the easiest believed. When Ken Goodman says that a written representation of language actually is language, we know that the big lie is the easiest believed. Look: if the Goodman's were right, we could locate a child somewhere, one child, who could fluently read a book he or she had never seen before, but who would struggle with the paragraphs and sentences and words. One child. Somewhere. You find me that child and I'll eat this whole talk.

Political correctness? Each year for the last few years now, the National Council of Teachers of English has included in its national convention a session on the right-wing agenda to promote phonics. Enough said.

Redefine research? I'll remind you of NCTM practices, then rest my case on this one.

No teaching? Teach what's already known? Teach marginally important content? These practices are rampant. I didn't make up the case study that "proved" young children can subtract before entering school. That study is published—where else—in the NCTM's journal.

Treat failure as success? Here's one you really might not believe: an *objective* of the Boston School District for fourth graders is for them to use invented spellings. I kid you not! I'll personally guarantee that many, many fourth graders in Boston are going to achieve wild success with that particular objective. What I'm really curious about is how they "remediate" those fourth graders who happen to NOT invent spellings. Do they pull them out of the regular classroom and send them to special inventiveness classes?

Let's ask a couple of minority leaders how far they think their constituents are going to get with stories and invented spellings.

There is a lot of lunacy out there, folks. But as I meander toward my closing, I would like to correct a few erroneous impressions that I have undoubtedly created. First, I should point out that I recognize the merits of some of the practices I have been lampooning this morning.

As originally conceived, there is merit to the idea of invented spelling. The original rationale behind

that idea makes a great deal of sense: don't correct the spellings of words that very beginning writers couldn't spell if their life depended upon it. That's a good idea, if not all that revolutionary and profound. Personally, I've always advocated that teachers ignore the misspellings of words in writing that we wouldn't expect kids to know. In general, Direct Instruction people have always said that we shouldn't punish kids for not knowing what they don't know. Some folks, however, have taken a basically logical, sound idea and turned it into a license for kids not to learn. That's crazy.

I might also add that Engelmann and Carnine have always placed an extremely high value on student errors. But the errors they value the most are those made by children *during the field testing of materials*, errors made long before an instructional program is published, errors that provide the information upon which instructional materials can be revised and redesigned. Like many of the fad advocates, Engelmann and Carnine don't think of errors as signs of student failure. But they depart considerably from those advocates in that Engelmann and Carnine consider student errors their own failure—Engelmann and Carnine's failure. I don't believe I've ever heard of Ken Goodman taking any personal responsibility for a child's failures, and then modifying an instructional program to eliminate such failure.

How about cooperative learning? I advocate cooperative learning—again, as originally conceived. Neither Bob Slavin nor the Johnsons ever suggested that kids take over the teacher's instructional role, nor have they ever advocated that some kids in a group be allowed to carry others along. Both Slavin and the Johnsons are among those who are most shocked by the careless ways in which cooperative learning has been distorted in recent years.

Bilingual education. Over fifty different languages are the native languages of students in the San Francisco School District. More than fifty. Bilingual means two languages, so I guess we're looking at something we might call "quintdecuple-lingual" education in a place like San Francisco. My point is that the diversity among students in the U.S. and Canada is growing at such a rapid rate that we need to be looking at new approaches, approaches that aspire to deliver choices to students through the use of fluent English, approaches that accelerate the rate at which students acquire essential academic knowledge, and approaches that respect diversity and rich cultural heritage.

Alternative assessment. If we need anything at all in education, it's new and better and more sensitive and more valid means of measuring student

progress—no doubt about it. Generally, one of three things happen with assessment right now, and not one of them makes a lick of sense. One is teaching the test. Another is teaching one thing, then testing something else altogether. The third is giving up on any type of valid assessment at all, using rhetoric instead by calling something "assessment" that isn't assessment at all. Many of the forms of assessment being promoted in conjunction with current fads fall into that latter category. In any case, a great deal needs to be done in this area, with an eye on making assessment more scientific, not less. Promising work in that area is taking place right now as I speak, just down the road a few blocks at the University of Oregon, where curriculum-based measurement is under development and refinement.

And how do I really feel about classical literature? Well, as you might have suspected all along, I'm an avid enthusiast of classical literature for young and old alike. I read good literature to my own daughter, just as my own mom and dad read it to me. I'm particularly chagrined by the extent to which many adults have missed what we might refer to as deeply moving literary experiences.

Imagine that you have had a wonderful day and look forward to a wonderful evening, attending a production of *Macbeth*, possibly down the freeway in Ashland, Oregon, or even across the ocean at Stratford-upon-Avon. You're feeling great. Then you get taken into an entirely different world, completely caught up in the life of Macbeth, a life ruined by the evil machinations of Lady Macbeth and by Macbeth's own folly. Then you follow Macbeth to the depths of his despair, as you hear the bard, through this pathetic character, say:

Life is but a walking shadow, a poor player
that struts and frets his hour upon the stage,
and then is heard no more. It is a tale told by
an idiot, full of sound and fury, signifying
nothing. (Act V, Scene III)

Words written five hundred years ago come alive to you, reach out to you in the waning years of the twentieth century and give you an experience that, hopefully, you will never have first hand. It's remarkable. Absolutely remarkable.

Or if your day wasn't so great, maybe a production of *A Midsummer Night's Dream* or *Lysistrata* will make you laugh, and make you feel good, and give you a perspective on the day's events that you would not have had otherwise.

Maybe you have read *Tess of the D'Urbervilles*, and have experienced the indignity of a double standard in a way that could be fatal if you lived it personally.

Maybe, late in the night, as you read the part where Tess finally wrecks her revenge on the evil Clare, you stand on your bed and cheer out loud at the delivery of justice, however primitive, and then you reflect upon the issue of suffrage and equality, and you begin to think about the inequalities that remain, and how much they resemble Tess's cruel tragedy.

Maybe at some point, you have read John Donne's *The Dreame*, and you have puzzled and puzzled over the meaning of the words, over the way that different prosodic renditions create distinctively different meanings from the same words.

My point is this: it isn't necessary that you or I or anyone else dive headlong into great literature, but it certainly is desirable that you and I and everyone else have that choice. Shakespeare is not easy to read, and not even that easy to listen to. Hardy can be very difficult to read. John Donne gives us a pretty challenging read. Coleridge nearly drives us nuts. Even North American authors can be adequately challenging. Note Melville.

The key to having the choice of enjoying great literature, in my view, is the ability to read, or, more generally, a fluent facility with English. That's just as true for a great deal of classical children's literature as it is for adult literature. Listen to this: literature is *not* an ideal tool of instruction; the door to literature is one of the ideal *options* available to those who have learned to read, and to read well. Let's stop confusing the two.

Well, I hope that clarifies my position on some of these issues. Another general erroneous impression I may have created is that I'm just as bad—just as fanatical—as the advocates of some of the fads I have attacked here. Actually, I don't suppose I can really deny that.

I'd prefer to think that I'm just passionate about a few things, and that those things are appropriate objects of passion.

Even the best educational research can be just marginally scientific at times. That, however, does not dissuade me from science.

I'm passionate about the idea of trying out instructional materials with real live children taught by real live teachers in real school buildings. I can no more understand the practice of widely promoting untested instruction than I could understand the practice of promoting snake oil.

I'm passionate about the idea of utilizing unparalleled advances in science in the pursuit of better instruction for students. It's true: even the best educational research can be just marginally scientific at times. That, however, does not dissuade me from science. On the contrary, it inspires a passion to improve upon educational research, incorporating the same science that has virtually eliminated the crippling disease of polio, to the end that it might also eliminate the crippling disease of illiteracy.

And finally, I'm certainly passionate about giving every child a fighting chance. If we've got any heart at all, we at least occasionally think about some poor child in the logging community of Forks Washington, a child whose Christmas this year won't be anything like that once dreamed of by his mother and father. If we have any heart at all, we occasionally think about that Cambodian child out East on Prince Edward's Island, who doesn't yet speak English, but who dreams in her native tongue of a life promised by democracy. If we've got any heart at all, we at least occasionally think about an impoverished black child in Tupelo, Mississippi or Chicago, or a Hispanic child in Yakima or Uvalde, or a cognitively fragile child in our own back yard, none of whom created the society from which they came, all of whom are loved by their parents in the same way that you and I love our own children, all of whom at least deserve a fighting chance to grow up as famous and as wealthy—and, if they choose—as stupid as anyone they know.

Those are some of the things I'm passionate about, and some of the things I'm quite confident that you're passionate about, too. I know the folks who you'll be working with in Eugene this week and believe me, they share these passions. Many of them, in fact, are directly responsible for *creating* these passions in me, and I wish you a good week of sharing passions with them.

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Sacrosanctity versus Science: Evidence and Educational Reform

Bernadette F. Kelly
University of Oregon

An interesting part of my job these past two years has been to travel widely in the United States giving presentations to math educators on "Reforming the Math Curriculum, a Challenge for the 90s." It has taught me some of the complexities and difficulties associated with educational reform. It has left me at times frustrated, hurt, confused, despondent, and angry. But it has also brought me moments of hope, optimism and great encouragement.

There is little need to make a case for reform itself. Something in the educational process is clearly failing—our students are not achieving world-class standards. Discouraging statistics abound. For example, there are 34 million Americans who cannot read the warning on a non-prescription medication they are taking. Only 14% of 8th graders are proficient in 8th grade math skills. Our students compare poorly internationally. The need for reform is clear. What isn't self-evident is the direction the reform should take.

As I have traveled, and presented educational alternatives, I have, at times, encountered resistance so strong, come face to face with assumptions about teaching and learning so different from my own that I have had to re-examine my own beliefs and assumptions about instruction. It has given me lots to think about. And so evolved this presentation: Sacrosanctity versus Science: Evidence and Educational Reform.

Sacrosanctity versus Science—what's the contrast? Science deals with the natural—religious faith with the supernatural. Science limits itself to what we can see, record, measure, manipulate and exercise control over. Faith is not limited in this way; it is the assurance of things hoped for, the conviction of things not seen (Heb. 11:1). Science concerns itself with beliefs articulated as hypotheses—predictions that are testable, refutable, and therein lies its beauty. It is flexible. Its hypotheses are subject to change based on observable evidence. And its quest is for parsimony. That theory is best that explains the most in the simplest way. A theory is strong that accurately predicts. It says: Given these conditions—this is what we will observe, and it turns out to be so. If the observations do not confirm even the best hypothesis, the hypothesis cannot stand.

On the other hand, aspects of faith that deal with the supernatural need not be subject to empirical investigation. That which is sacrosanct is untestable, inviolable, set aside as unto God. It belongs in the realm of our spiritual and religious experience. Yet discussions of educational alternatives often feel and sound like discussions of religious alternatives. Why? Because those discussions involve beliefs that are close to our heart—strong assumptions we hold about teaching and learning—about the very nature of instruction. And we hold those assumptions so strongly and we hold them so dearly, they approach sacrosanctity. If we are not willing to put them to the test, to expose them to the rigors of the scientific method, then we make them supernatural—they belong in our inner, spiritual life, and not in our professional life.

I'm a math teacher. Math education deals with the communication of concepts, skills, processes, applications, all of which are measurable, and none of which is supernatural. Teaching elementary math does not belong in the divine dimension. It is an entirely natural phenomenon.

Scientific beginnings were fraught with conflict. Challenging the establishment became a matter of life and death; scientists were sometimes hailed as heretics. Some of the faithful considered that science challenged basic Christian tenets, that it sought to overthrow the authority of the God of Christianity. Not so. It did not challenge the essence of Christianity. Rather it challenged some doctrines of the Church. In no way did scientific discoveries violate the heart of the Christian message. But the message of science was misunderstood. As Einstein once said: Great spirits have always encountered violent opposition from mediocre minds.

Here I'd like to clarify. The issue is not science versus religion. Einstein was a great scientist and was also a deeply religious man. My own personal faith, my spiritual life, is the singular most important aspect of my life. The issue is science versus dogma, whether it be religious dogma, educational dogma, or any other kind of dogma.

Historically, science challenged religious dogma: certain assumptions that were in fact false. Perhaps

the most famous example is provided by Galileo Galilei. Galileo was a brilliant physicist and astronomer who challenged the traditional theories of Aristotle and Ptolemy. The planetary theory of Ptolemy, which prevailed in Galileo's time was geocentric—claiming that the sun and planets orbit the earth. The focus of God's attention was naturally the center of His universe. Galileo made extensive observations to support the alternative Copernican theory—that the earth and other planets orbit the sun. When he reported his findings, he was *not* a popular person—the church authorities would not allow the document to be published, and he was brought before the papal inquisition. Under threat of death, he was forced to renounce his prior declarations. Perhaps because his work was in the natural, physical realm, he was not inspired to martyrdom for the sake of his beliefs. Galileo compromised. But Galileo was right—while his opponents were entrenched in dogma. They clung to what was, for them, sacrosanct.

Current educational dogma is equally well-entrenched. During my travels, I have encountered some opposition, evoked some strong responses. One of those responses came in written form (which I affectionately refer to as my hate mail). It provides us with an illustration of educational dogma. One section of the letter begins as follows: "If we believe, and rightly so in a learner-centered environment . . ." I can stop right here. This is dogma, no more, no less. It says: Your belief is wrong, my belief is right, don't you dare tell me any different. My response to this dogma is a simple question: Where's the evidence? What we must challenge in education today is educational dogma. The direction that reform must take is to recognize dogma and push it aside. It only clutters the way forward. Dogma states categorically—my belief is right, your belief is wrong. I refuse to entertain an alternative. My belief is not subject to scientific investigation, my hypotheses are not testable. They are sacrosanct.

What we must challenge in education today is educational dogma. The direction that reform must take is to recognize dogma and push it aside.

The hate mail proceeds to describe the learner-centered environment as follows, "... by questioning, letting children argue, encouraging them to reinvent their own methods of arithmetic . . . [we provide] rich mathematical experiences." Really? The rhetoric may sound persuasive, but do these practices work?

The Reform Workshop I present is designed to promote effective classroom practices—in textbook design and instructional delivery. It presents a research-based orientation to teaching. One approach that incorporates many of the research findings is Direct Instruction. Research has provided us with a rich information base about effective teaching practices in general, and Direct Instruction in particular. For example, the Follow Through research of the late 60s and 70s compared several different approaches, including Direct Instruction as well as learner-centered approaches (Stebbins, St. Pierre, Proper, Anderson, & Cerva, 1977). For each approach, there were model classrooms, and control groups of students. The main findings were that the Direct Instruction students outperformed students in all other approaches on measures of basic academic skills and cognitive concepts, as well as on affective measures such as self-esteem. The data dramatically demonstrated that Direct Instruction is an effective, humane, reliable method of instruction that equips students with valuable skills.

For many of the other approaches, including the five learner-centered or discovery approaches...the control students did better than students in the so-called model classrooms.

The data support is massive. I'll provide just one illustration. Figure 1 represents the overall significant differences in performance between the various Follow Through approaches and their control groups. The right-hand side shows positive effects. The left-hand side shows negative effects. For the Direct Instruction group, the positive differences outweighed the negative differences in all three areas—basic, conceptual and affective. For many of the other approaches, including the five learner-centered or discovery approaches at the bottom of Figure 1, the control students did better than students in the so-called model classrooms. In other words, they were going in the *wrong* direction.

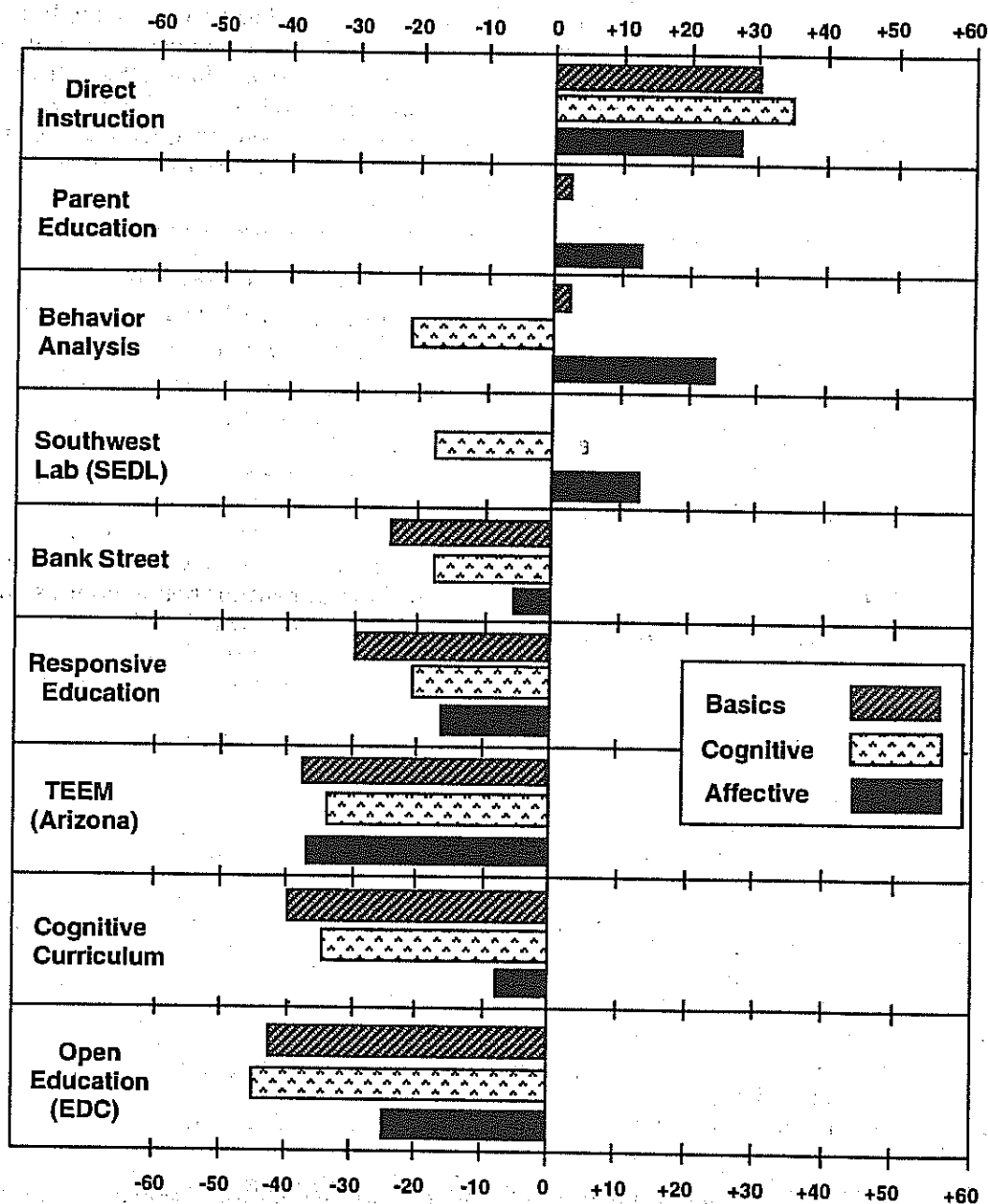
I have heard it said that this research is "out of date." This is like saying we should no longer vaccinate children against polio, because the research that established its effectiveness is out of date (in other words, not recent). The only question to be asked is this: Has further research demonstrated a more effective alternative? If not, the research is still current, still valid. So why is it ignored? In education, we are not yet scientific.

In education, the scientific approach is still embryonic. It is still revolutionary. There is no empirically-derived foundation of knowledge on which we can agree.

Revolutionary thought, over time, tends to become an accepted part of ordinary thinking. The scientific approach once revolutionary in other pro-

fessions such as medicine or engineering, has become the accepted "modus operandi." In education, the scientific approach is still embryonic. It is still revolutionary. There is no empirically-derived foundation of knowledge on which we can agree. We are still arguing about phonics instruction versus holistic instruction, teacher-directed approaches versus child-centered approaches, explicit instruction versus discovery learning. Why? Because the high-quality research, which has been conducted, is so hard to find. It's buried beneath a mountain of dogma, untested "oughts" and "shoulds."

FIGURE 1. Percent of Significant Outcomes on Three Types of Measures for Nine Major Follow Through Models



An example of an untested and influential set of oughts and shoulds is provided by the National Council of Teachers of Mathematics—the NCTM. In their Curriculum Evaluation Standards, the NCTM describe the basis of the document as follows: "These standards are based on a set of values, or philosophical positions, about mathematics for students and the way instruction should proceed" (p. 254). Beliefs and assumptions; oughts and shoulds.

It is true that education will always have an underpinning of "oughts" and "shoulds"—moral issues relating to our aims and goals. And this is perfectly appropriate. Science cannot answer questions in the realm of values. I agree with the NCTM's statement of purpose—"We have . . . an opportunity to make real, substantive changes in school mathematics. These changes will ensure that all students possess both a suitable and sufficient mathematical background to be productive citizens in the next century." These are reasonable oughts and shoulds. We should equip students with necessary skills. The question is—*How* do we produce these results? How do we equip students with these skills in an effective, humane way? When dealing with the "hows," we cannot ascribe blind oughts and shoulds. We have to test our ideas and do what works.

What a wonderful idea! Demonstrate effectiveness, then implement widely.... Yet these [NCTM] standards are being implemented nationwide without first having been tested and shown to be effective.

One reviewer of the working draft of the Standards suggested, "The establishment of some pilot school mathematics programs based on these standards to demonstrate that all students—including women and underserved minorities—can reach a satisfactory level of mathematical achievement, and urged that the success of these students be widely publicized" (p. 253). What a wonderful idea! Demonstrate effectiveness, then implement widely. To date, there has been no such demonstration. Yet these standards have been widely distributed. They are being implemented nationwide without first having been tested and shown to be effective.

Earlier in the Standards, the authors compare themselves to the Food & Drug Administration (FDA)—with the role of protecting the American public from shoddy products. How would you feel if the FDA sanctioned the use of a new drug treat-

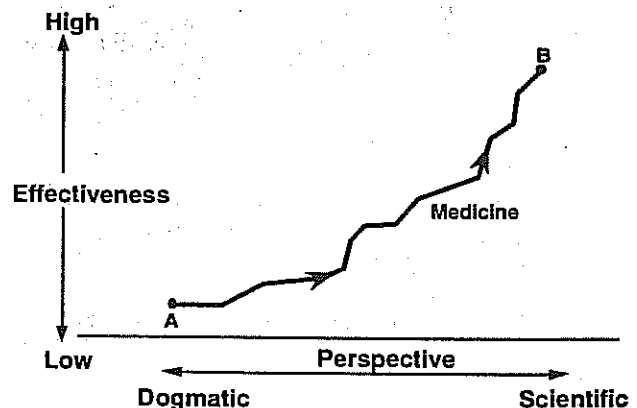
ment for cancer and allowed it to be widely distributed and administered *before* it had been thoroughly tested and *before* it had been shown not to have damaging side effects? I think you might be outraged, understandably so. But this would never happen in the field of medicine. Medicine has progressed beyond the realm of dogma. Yet instruction proceeds in American classrooms dogmatically day by day, year by year, decade by decade. New ideas (or old ideas with new, impressive names) are hailed as the latest example of "theory into practice." In fact they are examples of dogma into practice. And practice we do, blindly, at the expense of our students.

At one time, medicine *was* dogmatic and not scientific. Just as education today tends to be child-centered, medicine was patient-centered, client-centered. The doctor would ask the patient what he/she thought would be a good remedy! When practitioners do not have an agreed upon, established knowledge base for solving problems, they defer to the client.

Just as education today tends to be child-centered, medicine was patient-centered, client-centered. The doctor would ask the patient what he/she thought would be a good remedy!

One of the revolutionaries who hastened in the arrival of modern medicine did so by using scientific observation. At the time of Dr. Ambrose Paré, the standard treatment for battle wounds was boiling oil. (I don't know whether the soldiers were consulted about this particular remedy!) One day, Dr. Paré ran out of boiling oil and decided to treat the

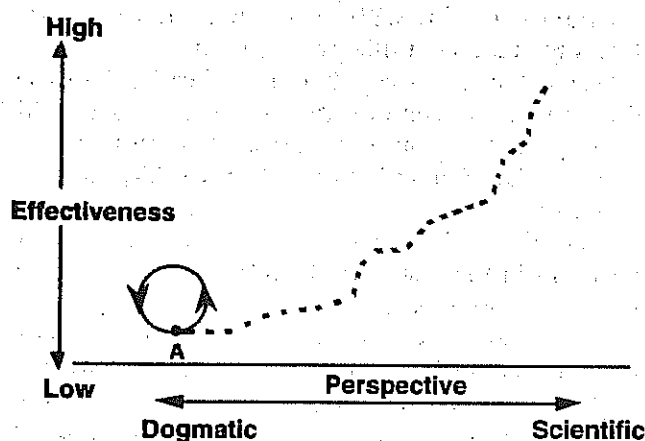
FIGURE 2. *The Paths of Reform in Medicine.*



wounds with salve instead. There was nothing remarkable about this. What was remarkable was that he returned to his patients later, to assess whether the two treatments had differential effects. The observations lead him to change his practices. The evaluation of the two alternatives was a step in the direction of a scientific approach to medicine. And medicine has come a long way since.

The horizontal axis of Figure 2 shows a shift from a dogmatic perspective to a scientific perspective. The vertical axis shows a continuum from low effectiveness to high effectiveness. Medicine started down at point A, and a shift from dogma to science has resulted in increased effectiveness. What direction has education taken? Well, it looks something like this:

FIGURE 3. *The Path of Reform in Education.*



We educators are trapped in the lower left-hand corner. We are still essentially non-scientific. We are not yet at the stage where new developments are seen as collective progress in a field. We are in what Thomas Kuhn describes as a "pre-paradigm" stage. He says: "If we doubt that non-scientific fields make progress, that cannot be because individual schools [of thought] make none. Rather it must be because there are always competing schools, each of which constantly questions the very foundation of the others." Competing schools of thought in education are very good at this. He goes on to describe the process whereby a "notable scientific achievement" by one school should establish it as the primary theoretical base, and bring coherence to the field so that further investigation may proceed efficiently and progressively. In the field of education, we have no such coherence.

Kuhn defines a paradigm as a constellation of beliefs, values, and techniques shared by a professional community. Once a foundational paradigm is established, there is opportunity for more and more detailed problem solving, successive refine-

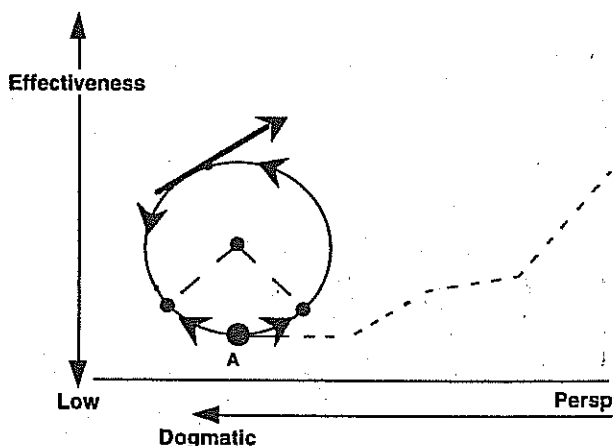
ments that provide a more detailed and complete model of how things are, and the principles governing how things are. In education, we cannot agree about how things are. We have no unifying paradigm. And without such, we cannot call ourselves a true profession.

Figure 4 shows what we might see if we enlarge our educational circle. First you'll observe a section of the circle that forms a pendulum... back and forth... back and forth. Consider the shifting emphases in math instruction. In the 1930s & 40s—skills for everyday life; 50s—experimentation and discovery; 60s—basic skills; early 70s—new math; 80s—back-to basics; now, in the 90s, we have constructivism. Meanwhile, we have gone nowhere...back and forth...

But, the pendulum and the circle are not the complete picture. Outside of the mainstream, off on a tangent are those zealots, the fringe types—for example, those Direct Instruction people. Going against the grain, they head off in a different direction. They say, "Let's get technical, precise, empirical. Let's get excited about what kids can learn, what kids can do if *we* do what works." At last! A touch of optimism. Is there a happy ending to the story? Alas, not yet. Why? These ideas are not popular, because our fundamental assumptions are not shared by the establishment, nor the majority. Not only do we lack an agreed-upon body of knowledge in education, even the notion that education *become* scientific is not universally accepted. Let me illustrate.

An excerpt from an article by Heshusius published in *Exceptional Children* in 1991 reads as follows, "The... Direct Instruction literature, I would submit, reflects [a] separation of science from reality. Its constructs, procedures and fundamental assumptions reflect... the characteristics [that] Medawar called an 'unnatural science'.... They

FIGURE 4. *Circular and Pendular Reforms in Education.*



reflect what von Bertalanffy characterized as 'scientism'; the intrusion of scientific (or rather pseudo-scientific) ways of thinking into beliefs of human experience where they do not belong (p. 114)."

Not only do we lack an agreed-upon body of knowledge in education, even the notion that education *become* scientific is not universally accepted.

Heshusius goes on to make the following 'observation': "When reading the . . . Direct Instruction literature, I suddenly realized that one could replace the word 'student' or 'child' with 'chimpanzee,' 'pigeon,' or 'rat' . . . and none of the procedures and ontological or epistemological assumptions would have to change." Or, to paraphrase, none of the procedures or assumptions about knowledge, and how things really are, would change. The Heshusius article attacks the assumptions and methods of Direct Instruction further, saying: "The clear implication is that learners cannot and should not be trusted to decide on the conditions and goals of learning."

The author is not alone in her position. There are others who argue against teacher-directed instruction, believing that the students should design their own instruction, in addition to learning from it. I read again from my hate mail: "Who does the child's learning for them? Is it the national curriculum? Is it the teacher, the supervisor? Is it Dr. Kelly? No. The child does his or her own learning for themselves. If we want to know how kids learn, then we need to watch them, ask them thought-provoking questions, involve them collaboratively in the dis-

covery. Mathematics is all about children making discoveries about patterns and structures, and using these discoveries to discover more mathematics." You might be wondering: Who wrote this? Who is this person? Well, he is the Coordinator of Mathematics for a board of education. He is the president of the OMCA—an association that is a Canadian affiliate of the NCTM. He is an influential person. And his views are absolutely consistent with the latest trends in mathematics teaching, which totally ignore the research data supporting explicit, teacher-directed instruction.

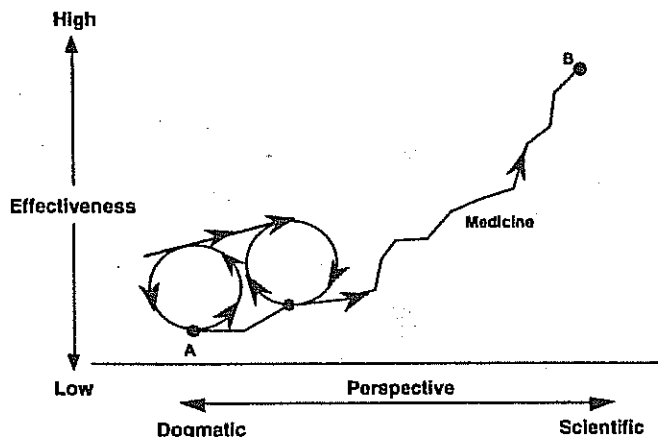
So why does the data make no difference? Because sacrosanct beliefs are what govern decisions that impact the lives of millions of American school children. Competing philosophies and orientations within the educational field are *so* far apart, we are constantly at odds with each other. Figure 5 illustrates the results of this predicament.

Even if there is an attempt to head off in the direction of a scientific perspective, we are held back, pulled into another circle of rhetoric, argument, legislation, confusion. Yes, we have a long way to go.

One of the Reform Workshops I presented last year was in Virginia. Teachers from more than one state were attending. A discussion developed regarding whole-class instruction versus ability grouping within a class. One teacher looked at another in amazement and said, "You mean you don't make small ability groups for math?" The other teacher exclaimed, "No! That would be practically illegal in State A." The other teacher responded, "It's practically illegal *not* to group in State B." What is advocated in one state is rejected in another. Meanwhile, our children are caught in the loop and must suffer the consequences of our arbitrary and capricious procedures.

I believe there are many far reaching and detrimental effects—negative side effects—that result from currently held, sacrosanct positions. For example, current theories denounce explicit instruction. Constructivist theory emphasizes that students must actively construct links from prior learning to new learning *for themselves* before knowledge can be meaningful. Some educational theorists then argue that explicit presentation as a means of instruction actually *prevents* a meaningful understanding of concepts or skills. For example, Piaget argues: "Each time one prematurely teaches a child something he could have discovered for himself, that child is kept from inventing it and consequently from understanding it completely" (1970, p. 715). How does this tenet affect our classroom practices? Danley (1992), an advocate of constructivism, offers

FIGURE 5. *Competing Philosophies in Education and Their Impact on Reform.*



an illustration of what constructivism means in practice. The following is an exchange between the student and teacher:

Student says: "Teacher, I can't make this problem come out right."

Teacher, looking concerned and leaning over to examine the paper says: "Hmmm."

Student says: "Well, what did I do wrong?"

Teacher, perplexed: "HMMMM!"

Student, frustrated: "Am I going to have to do this by myself?"

Teacher, smiling: "Hmmm."

Unfortunately, this isn't a joke. Danley concedes that: "The famous 'Hmmm' may not work in every case, but it has a remarkable effect on learners of all ages (even college students) as they struggle to unravel a problem. The teacher's reaction is intended to show concern, to encourage reflection, but above all, to respect the student's process, even if it is apparent that the direction the learner is headed in is 'wrong'."

For many, perhaps most children, this type of interaction leads to frustration, failure and demotivation. It does not lead to successful learning. On a broader scale, based on the same theory of learning, instructional decisions are made that have a detrimental effect, particularly for less advantaged students: The theory is used to justify delaying academic work.

You may recall from the Piaget quote earlier—"Each time one *prematurely* teaches . . ." Here we see the notion of "readiness"—being a function of the development of the child. As such, academic content may be postponed, on the grounds that a student is not "ready." Rather than providing disadvantaged students with a head start, by introducing beginning reading skills in kindergarten, for example, it is deemed inappropriate, a "pressure cooker approach," and the delay puts these disadvantaged students even further behind. It doesn't matter that so-called low-performing kindergarten students have been taught beginning reading skills repeatedly and successfully with methods that espouse another philosophy. The fact that it violates the tenets and assumptions held by the constructivists deems it "unreal," meaningless.

A third detrimental effect is the other side of the "readiness" coin—relabeling high performance as a problem, an imposition—redefining success as failure. Impressive performance used to be considered a positive effect of instruction, but recently I was shocked when presenting the work that students had been doing in fifth grade to the teacher that would be in charge of their math instruction the

following year. Here's the relationship I found: The more the kids could do, the less impressed he was! Why? Because some of the work the fifth-grade students were doing (with uniform success) was at a level he considered more appropriate for seventh graders, maybe even eighth graders. Rather than be impressed, he concluded that the students couldn't possibly have grasped the content—it must have been imposed upon them in some unnatural way, and he would have to compensate for this error of judgment by doing more developmentally appropriate activities the following year. What is so frightening about this interchange is that there is no means to challenge the notion of readiness. If one produces data, evidence that the cognitive development of children can be accelerated through careful instruction, it is simply written off as "unnatural" and therefore discounted. The theory refuses to submit itself to scientific investigation. It is sacrosanct. And given current trends, it appears things will only get worse.

Because some of the work the fifth-grade students were doing (with uniform success) was at a level he considered more appropriate for seventh graders, maybe even eighth graders, ...he concluded that the students couldn't possibly have grasped the content.

Clearly, something needs to change. There needs to be a revolution. Not a circular kind of revolution. So, what kind of a revolution? Well, Chairman Mao describes a *political* revolution like this:

A revolution is not the same as inviting people to dinner, or writing an essay, or painting a picture, or anything so refined, so calm and gentle, or so mild, courteous, restrained or magnanimous. A revolution is an uprising whereby one class overthrows the authority of another . . . to right a wrong, it is necessary to exceed the proper limit, the wrong cannot be righted without doing so.

Hmmm.

There have also been scientific revolutions—not nearly so bloody as political revolutions tend to be—but the sameness lies in the radical shift that comes about as a result of the new activity or knowledge or discovery that turns the old system or way of thinking on its head. And it inevitably brings about

conflict with the existing authority. For example, the discovery of X-rays in 1895 was first pronounced an elaborate hoax. The discovery violated deeply entrenched expectations, tightly held assumptions. A decade later, it contributed to an upheaval in scientific theory. It sparked a revolution, but only after having been denounced by the establishment. Sounds like history repeating itself. Remember Galileo? And remember Dr. Paré? The well-established physicians of Paris attacked his works and attempted to prevent their publication. Not only traditions, but egos, and vested interests were at stake. And the same thing is happening today in education.

A couple of years ago, one school in Texas received national attention with an appearance on ABC's *PrimeTime Live!* This school, Wesley Elementary, has a population that is 95% minority, 99% poor. It is set in one of the poorest neighborhoods in Houston. Wesley has consistently produced high-performing students, and in 1988, it ranked in the top 25% of all elementary schools in the state of Texas. But rather than being hailed as a model school, the staff were accused of cheating, of feeding answers to their students. The district authorities didn't like the method being used to accomplish the results—Direct Instruction. Teachers were confronted, classrooms searched, revealing no evidence of any foul play. The skeptics were blind on the other hand to the evidence all around them in every classroom that the results were valid—students working on sophisticated math problems, students participating in lessons with confidence, kindergarten and first-grade students eager to show off their reading skills.

The same vehement opposition and disapproval experienced at Wesley Elementary characterizes our exchanges regarding the reform of educational practices. Let me return to my hate mail. It says: "[I left] feeling very uncomfortable and upset—I didn't remain for the afternoon session. To expect teachers and children to be learning about these [topics such as fractions or long division] and using mindless drill and memory without understanding was a travesty. You spent no time on higher-level thinking, real problem solving, geometry, measurement, connections (this all came in the afternoon, but he wasn't there to hear it). . . . It is not important how a child adds, subtracts, multiplies and divides—it is important to know when to do these operations and then to know if their result is reasonable and why."

Clearly, my message was misunderstood. We were not communicating. I am also concerned with the 'whens' and the 'whys.' Shared goals (of providing quality instruction) were buried beneath the

ever-recurring 'issues'—child-centered versus teacher-directed; discovery versus explicit; product versus process. But these issues, though hotly debated, are not the real issues. I maintain the bigger issue is: Sacrosanctity versus Science.

So what form must this educational revolution take? What must we do to right the wrongs? To what limits must we go? First, I believe we must challenge school decision-makers to implement programs and practices that have demonstrated their superiority in meeting specified goals. Unfortunately, information regarding these programs and practices is buried beneath vast quantities of less relevant information contained in professional journals.

What information is relevant? From a scientific perspective, the only source of information that has implications for effective practice is, I believe, comparative intervention research. Descriptive studies explore and describe existing problems. They can provide a rich information base leading to new goals, and ways to evaluate whether these goals have been met, but they do not directly imply the most effective implementation for accomplishing those goals.

Current popular interventions, such as whole language and the procedures recommended by the NCTM are derived from the descriptive studies of child development and learning. Without being subject to empirical investigation, however, these ideas are nothing more than untested hypotheses.

It appears as though the intervention research that has been conducted has been largely ignored. We have already mentioned Follow Through. Addressing this neglect, Kathy Watkins (1988) summed it up this way:

The history of the Follow Through experiment and its still-evolving effects constitute a case study of how the educational establishment operates. As in other bureaucracies, it is composed of parochial vested interests that work either to preserve the status quo or advance a self-serving agenda. The educational establishment's vested interests have effectively prevented the largest experiment in history on instructional methods (costing almost one billion dollars) from having the impact on daily classroom practice that its results clearly warranted.

This neglect of empirical data doesn't make sense. It is irrational. It is madness. I would wager it was in the face of similar resistance to objectivity that Isaac Newton remarked, "I can calculate the

tions of the heavenly bodies, but not the madness of men."

We must ask ourselves the basic question: What are kids in school for? They are there to learn. Academic skills are not everything, but they are a minimum requirement for completion of a basic school education. They are what employers and colleges expect. We do have a job to do.

I agree with the NCTM when they say that they want to equip students for the future—they want to enable them to become productive members of society. We share the same good intentions. We share the desire for reform. But I believe we can only break free of the endless debates and circular trends by embracing a scientific perspective, by letting go of our sacrosanct beliefs—subjecting them to the rigors of scientific investigation. And I must examine my own beliefs just as you must examine yours. Recently, I read an article about Japanese schools and found myself highlighting everything confirming my own views about effective instruction. Things which didn't quite fit, or that contradicted my beliefs, I tended to overlook and de-emphasize. This is perhaps one of our most basic human tendencies. But I too must be prepared to alter my position, even to relinquish my strong support for Direct Instruction, if future research demonstrates more effective alternatives.

Educational reform must move in the direction of a unified, scientific perspective, not a perspective that takes a sacrosanct position, that makes assertions and reacts violently against any challenge.

There are encouraging signs that some schools, some districts, some decision-makers are ready to look at what has been shown to be effective and to implement what works. For example, remember Wesley Elementary? The fact that Wesley students are indeed learning and outperforming their peers in more advantaged settings is finally being recognized. The district superintendent has been replaced. And the principal, Mr. Lott, has been given an opportunity to share his expertise with other elementary and junior high schools. Partly as a result of the exposure, a coalition in Chicago involving Malcolm X Community College, the owner of the Chicago White Sox, and the McArthur Foundation is helping several interested elementary and high schools to implement similar programs. And it

seems likely that you, the reader, having read thus far, are at least interested in the notion of implementing proven methods, and using validated instructional programs.

So, to sum up (in case you missed my point), in education we have what is sometimes called an *attitude problem*. Educational reform must move in the direction of a unified, scientific perspective, not a perspective that takes a sacrosanct position, that makes assertions and reacts violently against any challenge. We cannot afford to protect our egos at the expense of effectiveness. There is too much at stake; there are too many students at risk. The perspective we take must stand, not on holy ground, but on established, empirical evidence. We must ask continually: Where is the evidence? We must be committed to do what works. Only then will we provide our students with what is rightfully theirs—the best education we can offer.

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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.

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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.

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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.

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An Interbehavioral Approach to Teaching and Problem Solving in Education

Chuck Baxter

Ithaca Public Schools, Ithaca, New York

Presently, our schools attempt to function on the basis of western psychologies that are dualistic in nature, based on myth, or on relatively unsophisticated behavioral psychologies. Consequently, some educators, under the tutelage of these psychologies, assert that a stimulating environment enriches intelligence and a deprived one detracts. Other educators under the same tutelage argue that no force or forces can push a person over an innate upper limit. Both factions are dreamers, because palpable, tangible, intelligence has never been seen, felt, heard or in any way sensed. It has always been a hypothetical construct and one whose reality base has been confined merely to human belief.

On a realistic basis intelligence is not a thing, but an adjective. Performance that society honors is called superior, talented, genius, or skilled, and that which is disparaged is termed inferior, incompetent, dull, or stupid.

When intelligence is used as an explanation of the behavior it describes, circularity is invoked. The construct becomes a mythical causal power for described characteristics. For example, as clinical testers we impose upon the student a series of contrived closed events, thus embarking on the "mythological rampage." This myth encompasses a creation of similar problem types described as reified constructs implying cause. The natural outcome with almost any student tested is a cluster of poor, relatively low scores which we assume to be organismic "deficits." At this point, continuing to freely use our imagination, we relate these theoretical "deficits" to some disparaging characteristic of a completely separate and independent natural event which is made up of a different set of controlling variables.

We have now completed the cycle. We start with a mythological construct, impose it on a natural event and finish with a reification, implying cause, leaving the classroom teacher with no implied remedy. It is a diagnostic procedure that relieves the teacher of blame at the expense of the child, but leaves her/him with little or no help in resolving the problem. Finally this procedure is almost always done without ever truly observing or describing the

natural event in question. In another more logical setting this could and probably would be called a destructive act of witchcraft. In causal psychology there is a failure to recognize that the event in question is a field of factors—a field that is not reducible to any one of its components, for the field consists of a different level of organization than any of its components. To place emphasis only on one component or set of components would be to redefine the event. Therefore, it would be futile to search for a controlling force; for there are a multitude of contributors and the only reality is a description of these interactions and their relationship to similarly described events.

Intelligence is only one of many mythical constructs that we in education treat as real things. Educational language, mostly taken from western psychological language, is replete with jargon that logicians have called "a disease of the language." For example, we as professionals refer to the many forms of perception; auditory sequential perception, visual perception, motor perception, spatial perception, to name a few, as reifications that actually exist in some biological form.

A New Perspective on Perception and Language

In reality, perception is an act, as in the act of perceiving. The act, from an interbehavioral perspective involves:

- A. An organism which has organs for sensing.
- B. The object which has properties which can be sensed.
- C. A medium that facilitates the contact.

There are no mysterious internal processes that reflect the external world, but only an interaction that is comprised of an interbehavioral field. Living language involves a speaker interacting simultaneously with a listener and the object of reference. Thus language is bistimulational interaction for both speaker and listener. In short, language is speaking about something to someone. Therefore, it is an interbehavioral act and not a construct of internal processes. A scientific analysis should be made on

the basis of direct observation of the natural act absent of these imposed mythical reifications such as visual and auditory learning styles, visual and auditory reception, auditory expression, visual and auditory association, manual and kinesthetic reception, multisensory reception, visual and auditory closure, and on and on. And of course the clinical psychologist has come up with a plethora of reified labels according to the testee's construct score or test behavior; visual or auditory handicapped, specific language disabled, and, this is a good one, attention deficit disorder. This is the reified label placed on the child who has difficulty paying attention to disagreeable things in school. And of course we keep adding labels as we create new and interesting construct tests.

More logically as testers, we should not ask which reified construct is the cause of the child's reading failure when a child is having difficulty reading, for we are already proceeding on the basis of at least three false assumptions:

1. The fault is due to the child.
2. A behavioral or psychological event is localized in the organism. Therefore the natural event of learning to read can be described by a total focus on the child.
3. There are no other significant variables outside the organism affecting the child's progress.

Again, from an interbehavioral perspective the psychological event is not localized in the organism, nor is it a mere organismic act. Thus it is not reducible to structure or function. The psychological event, as a natural event, is not just an action of the organism; it is not just behavior but interbehavior. It is mutual and reciprocal activity in a field.

If the learner fails to learn, the problem may lie within the learner, but it is more likely the problem lies in the instructional-communications-interaction.

Failure in learning to read, as a natural event, may be caused by a multitude of variables, only one of which may be due to the fault of the child. We know that the intellectual crippling of children is caused overwhelmingly by faulty instructional presentations, not faulty constructs in children. In other words if the learner fails to learn, the problem may lie within the learner, but it is more likely the problem lies in the instructional-communications-interaction. So what is the basic remedy?

1. Identify faults in the communications and correct them.
2. If the child does not learn via sophisticated communications, then those communications need to be modified according to the mistake type and context in which it was made.

It is no small feat to successfully accomplish the above. The following describes some of the instructional changes that can be made, especially for the more naive learner, to assure the beginnings of effective instruction:

1. Use clear, concise, consistent language in instruction.
2. Juxtapose connected concepts side by side showing sameness, while placing similar but different concepts far apart and treating them differently.
3. Provide effective correction procedures, according to mistake type, for all instructional objectives.
4. Develop effective strategies for teaching concepts (e.g., model-lead-test).
5. Determine appropriate concepts to be taught on the basis of what the learner knows and does not know.
6. Provide a broad range of applications of the concept being taught to promote effective learner generalization.
7. Provide necessary practice to assure mastery.
8. Provide distributed review spaced over time to secure retention.
9. Use:
 - a. the "HEAT" approach (High Energy Animated Teaching).
 - b. an effective, warm, but demanding relationship with the learner, where the learner is always corrected with dignity.
 - c. effective fast pacing to maintain learner attention.
 - d. effective signals for clarity in monitoring criterion performance.

Problem Solving in Education From an Interbehavioral Perspective

Problem solving from the interbehavioral perspective, focuses on the interaction of the primary variables in a contextual field. In teaching, the instructional communication is the primary variable that defines the interaction. This focus is different from the child-centered approach or the clinical-diagnostic approach, where the focus is on the child. Consequently, the position of responsibility and blame is different. The language that is used in the interbehavioral approach places the position of

responsibility on the interaction and the communications of the interaction; consequently, it is the contextual communication that is blamed when learning problems are demonstrated.

If, for example, the learner in kindergarten is reversing numbers, a child-centered practitioner concludes, from an exclusive focus on the child, a normal developmental delay. If the same learner, at the age of 8 1/2, is still reversing numbers, the clinical diagnostician, also from an exclusive focus on the learner, describes the child as perceptually handicapped. In either instance it is noted that there is no implied remedy in the developmental or diagnostic language.

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The interbehavioral teacher (IBT), operates from a different perspective. From a contextual focus on the interaction (the communications between the teacher and learner), the IBT realizes some basic principles that make for the most effective teaching. For example, one of those principles describes the probable confusion that is created when the teacher introduces similar, but different concepts close together, and treats them the same. Therefore, to prevent learner confusion when teaching similar concepts, teach them far apart, and show differences.

The IBT notices, for example, that in number writing (0-9), the efficient production of those numbers falls into 3 different groups:

1. Those numbers that are initiated by going down and to the right (i.e., the number "4").
2. Those numbers that are initiated by going to the right first and then down (i.e., the number "7").
3. Those numbers that are initiated by going to the left before going down (i.e., the number "9").

The IBT knows that constructing instructional formats where these numbers are clustered into 3 separate groups, and taught far apart, showing difference, literally prevents the most naive learner from writing numbers in reverse form. Consequently, where the above basic principle has not been considered, and the naive learner reverses, it is the communications, not the learner that the IBT blames. The IBT realizes that some learners, who are confused by the instructional communications, not delayed, nor

visually perceptually handicapped, will reverse numbers, letters, or will work a double digit addition problem from right to left if ambiguity is not eliminated from the communications.

Another common problem in learning the basics is spelling accurately in the context of composition writing. Third- and fourth-grade teachers frequently notice the learner who consistently spells well on the 10 to 20 word spelling test given every Friday, but misspells the same words later in the context of composition writing. The learning problem is typically referred and diagnosed by the clinician as a "visual imagery long term memory deficit."

The IBT, on the other hand, is familiar with the principle that states: To promote generalization, provide a broad range of applications. If we want the learner to spell accurately on Friday spelling tests and in the context of composition writing we must communicate that expectation by treating the two situations as similar. Some common communications that set up the naive learner to treat the two spelling situations differently are:

1. Spelling accuracy is of primary importance on spelling tests, but often is treated as unimportant in teaching writing. In fact, it is emphasized in the Writing Process Approach to encourage the learner not to worry about spelling, so as not to discourage the fluency of getting the thought down on the page.
2. Learner performance on spelling tests typically amounts to writing only the word being spelled. In composition, words are almost always in the context of sentences.
3. Rarely, if ever, is there an intention to specifically teach or even review spelling accuracy in the context of teaching expressive writing.

The IBT, rather than imposing some reified clinical label that blames the learner, recognizes these spelling mistakes as undergeneralizations or as sameness mistakes, where the learner stipulates, or undergeneralizes, by not transferring sameness from one situation to another. This occurs because two similar situations appear to be different to the learner. The IBT knows that the implied remedy is to place the two situations side by side and show how they are the same.

A third, and most frequently reported learning problem is where the learner has shown proficiency in learning a concept on one occasion, but fails to exhibit that proficiency on other occasions. Anyone who has been in education for any period of time has heard the classroom teacher report, "I don't understand, he knew the concept yesterday, but today he didn't. He must have some kind of memory problem."

The IBT also recognizes the situation as a memory mistake, but instead of blaming the learner, (s)he again blames the communications. The IBT knows that in order to successfully teach proficiency or the mastery of any concept, experiences must be constructed that provide *practice that effectively shapes proficiency*. But to establish demonstrated proficiency does not in any way assure that the learner will remember how to exhibit the concept when it is called for in the future. To assure remembering, *distributed* review is required in future teachings. Teaching mastery is remarkably different from teaching remembering: To provide for the most effective mastery of a given concept the learner must experience *uninterrupted* practice. But to assure the most effective remembering of a given concept systematic *interruption* is needed where the learner is required to recall the concept in unpredictably occurring situations.

Becoming an IBT Teacher

The traditional teacher who converts to becoming an IBT will discover that taking the interbehavioral approach empowers one to promote effective intellectual-academic/social-emotional learning beyond the scope of any other teaching approach.

There is a plethora of research that has been accumulated over the past 25 years to support this prediction.

Some other exciting events that are in store for the IBT are:

1. With a better understanding of communications that make for effective teaching interactions, comes a sense of self assurance and competency in preventing learning failure.
2. The IBT never has to assume a defensive posture where they find themselves blaming people for learning failure; more traditionally, for example, where either the child, the parent, or both are blamed. The IBT only takes responsibility for modifying the interactive communications, where necessary.
3. Most importantly, the IBT notices that the learner who has previously experienced learning failure, now, as a student of the IBT approach, changes. From an interbehavioral perspective, people are what they do. In this sense the communications of the interaction define the learner. Through well-constructed communications even the most naive learner experiences 90% first-time success in all learning. Consequently, he feels smart. He becomes confident in knowing, at least in the IBT situation, that he is smart. And finally,

his self esteem soars. He feels smarter, safer, more responsible, and respected, in a place where he does not make as many mistakes as he used to. And when he does make mistakes, he doesn't get blamed.

The greatest deterrent to effective teaching and problem solving in education is the present approach to problem solving that is based on psychological superstition.

Concluding Comments

The intention of this paper is to give a brief description of the differences in teaching, and problem solving associated with teaching, from an interbehavioral perspective, as opposed to other approaches based on more traditional psychological perspectives. From the interbehavioral perspective the primary variable of focus in effective teaching, as in any interbehavioral event, is not just on the learner, but is a study of a multitude of intervening variables. In the case of the natural event of teaching, the primary variables of focus are the instructional communications, in accompaniment with other intervening variables that define the event, such as the teacher-learner interaction, setting, and event history.

To achieve effective instruction in our schools the teacher must first acquire a true understanding of learning and learning failure by skillfully performing an analysis of the contextual event where behavioral constructs are derived from direct observation, not the other way around where we impose speculative developmental, or clinical constructs on the natural event based on theories that are founded on traditional psychological constructs. There are a number of circumstances that we in education must face to make our schools more effective. But, by far, the greatest deterrent to effective teaching and problem solving in education is the present approach to problem solving that is based on psychological superstition. These superstitions cloud our vision to the point of ritual. We make critical decisions on the basis of these ritualistic habits and politically correct views rather than on the basis of direct observation of what is happening and what is effective. If we are to be successful in creating effective change in education we must make it known to teachers that there is a psychology that is an alternative to those psychologies that use a mythological language that

immobilizes the teacher and prevents him/her from becoming effective. From an achieved interbehavioral perspective, the teacher is capable of becoming proficient in constructing effective

If we are to be successful in creating effective change in education we must make it known to teachers that there is a psychology that is an alternative to those psychologies that use a mythological language that immobilizes the teacher and prevents him/her from becoming effective.

teachings, and skilled in the analysis and modification of interactions that interfere with learning. By using a scientific language that truly describes the natural behavioral event under consideration, the teacher becomes empowered to construct implied remedies that induce effective change. But to ask the

educator to create effective change in teaching, via traditional western psychological jargon, would be equivalent to asking a blind person, who has never driven a vehicle, to win the Grand Prix with a square-wheeled car that has no steering mechanism.

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Note: J. R. Kantor and N. W. Smith define Interbehavioral Psychology as "a natural science psychology that departs radically from the traditional mind-body or dualistic doctrines which hold that organisms are composed of psychic structures or functions which are manifested by, or correspond to, anatomical and physiological actions or behavior. Interbehavioral Psychology regards psychological events as definite organized fields in which organisms and stimulus objects interbehave, and that what happens in detail is based upon previous confrontations of the organisms and stimulus objects under specific conditions prevailing at the time."

WAR Against the Schools' Academic Child Abuse

by Siegfried Engelmann

can be purchased from ADI:

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ADI member price: \$14.95



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When Will They Ever Learn?

by Andrew Nikiforuk

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The *Lumby Valley Times*, a small community newspaper in British Columbia's interior, recently ran a report on an imaginary Year 2000 track meet. Year 2000, by the way, is known to most B.C. parents as a controversial program to reform the public school system. With an eye to the future and "changing societal conditions," it aims to "serve the interests of all students" with a novel mix of nongraded classrooms, cooperative activities, esteem-building anecdotal report cards and a commitment to "lifelong learning." Reflecting this bold design, the *Times'* Year 2000 track meet eschewed standards and competition. As a result, the high jump came with no bar, because hitting it "could produce an attitude of failure." The sprint came with no set distance, because participants should feel free to run in any direction and as far as they wished. Ball throwers merely placed the ball in the spot where it "felt right." And so on. In the end everyone received a big trophy. "This is to better prepare our young people to be successful in our non-competitive society," concluded the *Times*.

The paper's ruthless mocking of Year 2000's educational philosophy reflects two sober realities: that educational reform in British Columbia has definitely gone off in the wrong direction and that many parents with children in the school system feel mightily betrayed. Although educators still champion Year 2000 as "the biggest educational change in 150 years," the program has become so mired in paper (450 documents in one year alone), politics and notoriety that even the Ministry of Education admits that the future of Year 2000 remains problematic. "Nothing is written in stone," now caution Jerry Mussio, the province's director of school programs and one of Year 2000's key bureaucratic guardians. "The need for clarity is a major issue We are still modifying a lot of proposals."

The public has also modified its initial response from one of polite confusion to open hostility. While more than 30 ad hoc groups opposed to the plan's child-centered approach to learning have sprung up across the province, private schools report significant increases in enrollment. Many teachers, wearied by the program's "fatuous buzzwords and

phrases," openly predict its demise by the Year 2000 or sooner. "A lot of people are unhappy with the educational system," notes Ron Adams, a school trustee and investment broker in Salmon Arm. "Year 2000 has become a catchall for what's wrong in our schools."

Although Year 2000 increasingly looks like just another incoherent and chaotic exercise in modern school reform, it did not begin that way. The original intent, noble by most accounts, was to set right the imbalance created by decades of "streaming"—the pro-academic, often anti-democratic philosophy of ensuring that the cream of the educated crop would rise to the top. To correct the tilt, schools were to be empowered to use different tools and strategies appropriate to raising the academic performance of all their students, not just those bound for university. But given the haphazard process in which school policy is made, and thanks in no small part to shoddy and uneven leadership (none of the principals involved in project five years ago remain in government today), this effort to encourage higher standards through diversity simply became another monolithic and badly executed attempt by government to change an entire school system "with centralized directives that no one understands." Adds one disgruntled educator: "The real purpose has just been blown away."

Supporters and critics alike agree that Year 2000 has become a highly complex menu of theory, practice and jargon all geared to replace the shape and focus of kindergarten to Grade 12 with three ungraded composites: Primary (K to 3), Intermediate (grades 4 to 10) and Graduation. Based on the theoretical works of modern psychologists such as John Bradshaw (*The Inner Child*), David Elkind (*The Hurried Child*), and Jean Piaget (*The Playful Child*), the primary program has noisily colonized most of the province's schools with nongraded "environments" where groups of children of varying abilities and ages now playfully collaborate.

This is not just a west coast fashion. Across North America, school boards are now experimenting with similar reforms. They include no-fail and nongraded classrooms where students of varying abilities and

ages all play or work together, and portfolio assessments—a form of nonjudgmental progress report to parents which involves filing copious samples of student work. Most of these “child-centered” reforms come with thin or questionable research bases. Although many were implemented in Alberta in 1988, most were withdrawn last spring due to widespread confusion and chaos about what all the jargon meant. Noted one Alberta teacher in *Trying To Teach*, a union report on the fashionable mess visited upon the province’s classrooms: “There is simply not enough time in the day for all the [Department of Education]-based initiatives as well as district-based initiatives It makes me wonder who we are serving: students or new innovations.”

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Setbacks have also characterized B.C.’s educational reach towards the millennium. Though the intermediate program did begin in fits and starts, the ministry has sent it back to the drawing board due to a profound lack of meaningful content that, as one reviewer noted, threatened to reduce the program to “the Trivial Pursuits model of curriculum.” The graduation program, when completed this fall, will likely include little Year 2000 philosophy because neither secondary teachers nor universities can stomach it. A review of Year 2000 by the University of British Columbia’s faculty of arts declared: “The philosophy of the program erodes attempts to achieve academic excellence.”

The dogma driving Year 2000 is not really new but a progressive mishmash of ideas that have been floating around schools for nearly 30 years. Some tenets are harmless, whereas others read like a Darwinian recipe for penalizing children who need structured lessons and steadfast teaching. One Year 2000 primary resource guide explains that learning is simply a natural and enjoyable activity that demands “examining one’s beliefs and knowledge.” Each and every child should be able to proceed at his or her own pace in his or her own style, adds the guide. It also suggests that learning is really a matter of students’ constructing their own knowledge as well as their own reasons for learning.

To survive in such a progressive milieu, a child needs to be a highly motivated self-starter with good language skills. Given such a child-centered bias and the primary guide’s total avoidance of standards (it offers only “developmental sequences”), one teacher recently wondered in a union journal if

“there is a place for the teacher in the Primary Program.”

This is a concern shared by thousands of parents, including Karen Marsan. She lives in the B.C. interior, has two children, Joan (11) and Peter (8), and recently pulled both of them out of the public system because of Year 2000’s “muddled amateur psychology.” She first became alarmed when she learned that Joan spent most of her time tutoring other students because of her superior reading and writing skills. “Collaborative learning” in Joan’s classroom meant that some children carried heavier burdens than others. “All the students wanted to be in Joan’s group because she did most of the work. It caused an awful lot of resentment.”

In contrast, Marsan’s son, Peter, was having difficulty learning how to read in Grade 2 (now called Year 2) because of another Year 2000 stalwart: “whole language.” This “progressive” technique for teaching the language arts relies on context rather than phonics, essentially encouraging children to guess at a word rather than sound it out. Unfortunately, Peter was not guessing right. When Marsan made some inquiries, Peter’s teacher, a staunch defender of Year 2000, said the boy had a “learning disability,” was uneducable and “might spend his life on welfare.” This bold revelation, however, never appeared on any of Peter’s glowing “anecdotal report cards” that read like this: “I am happy to be his teacher. Thank you for sharing such a warm, friendly boy with us.”

Last year, Marsan placed Peter and Joan in a Seventh Day Adventist school where he received some solid phonics instruction and is now reading at grade level. None of his current teachers think he is learning disabled. “The only thing wrong with Peter was that he wasn’t being taught anything,” says his mother. Nevertheless, she does not feel vindictive towards public school teachers, most of whom, she believes, are well-intentioned. “They actually believe that they can save the world by having children form circles, work in groups and smile even though they can’t read or write or function outside the school.”

Promoting preposterous classroom practices was never the intent of Barry Sullivan, the late Vancouver lawyer and guiding force behind the 1988 British Columbia Royal Commission Report on Education. The Year 2000 program is, in fact, a part-legitimate and part-bastard child of Sullivan’s broad-ranging study, which lamented the province’s high school dropout rate (34 percent) and recommended a series of “adjustments” to help the system better serve those students not destined for university.

According to Thomas Fleming, the commission’s editor-in-chief and director of research, Sullivan

prescribed no "Royal Road to Learning" and made no calls for "ambitious new social or educational engagements." The original thinking was far more measured. He did, however, feel strongly that the damage done by streaming be redressed by having schools focus more narrowly on educational objectives for all students, with a common curriculum for grades 1 to 10. Unlike many Year 2000 enthusiasts, Sullivan believed that to serve the public well, educators must make room in the school system to accommodate different educational ideologies—striving for universality in standards through diversity in practice.

To do this, the commission recommended a system with "loose and tight properties": loose in the sense of giving schools greater freedom and choice to decide how best to meet the needs of the local community, and tight in the sense that the government would set the standards and assessment procedures for measuring how well teachers and students were doing. Sullivan clearly wanted a results-driven school system that ultimately would "free the great human resources found in and around schools from the weight of conflict and uncertainty."

In this regard the commission never proposed that all schools establish ungraded primary groupings or replace traditional subjects like English and social studies with "integrated" programs based on, say, "forest life" or "spring." The report merely wanted to give local schools the authority to try new approaches "on an experimental basis" without having to come, cap in hand, to Victoria for permission. In retrospect, Fleming now admits "that it may be argued that the commission's recommendations about curriculum and instruction were not as well balanced intellectually as those in other areas."

A largely experimental approach to curriculum was adopted and applied as British Columbia public school dogma.

The fact is, the research base on these largely untested innovations as a means of improving academic achievement for potential dropouts was weak then, and it remains weak today. Does integration of subject matter really work? Is a multi-age primary classroom truly a better learning environment than a room full of eight-year-olds? Supporting evidence is not exactly pouring in. In fact, one recent British study found that multi-age classrooms resulted in one-third of the students in those classes performing tasks that were either too hard or too easy.

When the time came to translate Sullivan's general recommendations into specific school policy, important distinctions between what was essential and what was experimental got lost in the shuffle, the result being that a largely experimental approach to curriculum was adopted and applied as British Columbia public school dogma. Some critics put it down to the absence of consistent stewardship. Since its inception, Year 2000 has passed through the hands of three education ministers (two Social Credit and one NDP) and four deputy ministers. None of the originators, such as former education minister Anthony Brummet or former deputy minister Sandy Peale, remain on the scene today.

With no firm stewards in government, process managers wielding razor-sharp jargon won the day. Not that it was an undemocratic process. In the name of fairness, the government took into account every special interest group with a stake in education—some 20 associations in total. The only sector left out was the public. The actual task of writing school programs for the primary, intermediate and graduation levels eventually fell to three distinct steering committees, composed largely of teachers, social workers and school administrators, none of them operating within the constraints of public interest. "They came in without reading or understanding the Sullivan commission report and served their own interests," notes one observer of the consultations. "They didn't balance the left or right, the progressive versus the traditional, and so the entire process tilted to the child-centered and progressive side ... to a soft and gushy version of what schools should be." Asked if public policy hadn't unwittingly become too much a captive of the people responsible for its implementation, Jack Fleming, a former assistant deputy minister of education who oversaw many Year 2000 developments, responded: "I don't totally disagree."

The self-interested nature of the exercise became evident in the government's 1992 review of the primary program's design and philosophy. Not only did three members of the primary steering committee also serve as members of the Primary Program Review Consulting Group, but five of the seven reviewers appeared as key sources in ministry documents supporting Year 2000. Not surprisingly, these reviewers commended the government "for an extraordinary document ... very up-to-date and embodies the very latest findings." Notes Doug Macdonald, the chairman of the Vernon chapter of Concerned Adults for Responsible Education, a new group opposed to Year 2000: "There just wasn't any objectivity. The reviewers of this thing just fed off themselves."

What the reviewers missed in their blissful "congruence"—another Year 2000 buzzword—appeared in a seven-page article last year in Simon Fraser University's *Journal of Curriculum Studies*. After commending the program's stated goal of making schools more "learner-focused," author Roland Case, assistant professor of education at SFU, found that Year 2000 suffered a bad case of "vagueness, ambiguity, redundancy, contradictions and jargon." The programs' assumption that intellectual development was simply a matter of building on the knowledge and experiences that children brought to school, he wrote, was "flawed" or "at least misleading" and a contradiction of the very meaning of the word educate ("to lead out").

Blinded by self-serving reviews, the ministry pressed on with an avalanche of government pronouncements ("a paper thunderstorm," rued one teacher) that obscured a number of important distinctions. The government, for example, had never mandated nongraded classrooms or multi-aging as compulsory reforms. They were merely "suggested options," says the ministry's Jerry Mussio. He frankly adds that the current program has been compromised by "a confusion of ends and means" in the system. But the sheer proliferation of blue and green documents on suggested classroom practices—a field that education ministries in most provinces have wisely left to teacher discretion—led many educators to believe that nongraded classrooms were the new Holy Grail. Administrators, eager to appear progressive to improve their chances for promotion, quickly impressed the "suggested options" into their schools.

"Teachers feel that the notion of levels of reading and writing is inappropriate because it leads to the assumption that some students cannot perform certain tasks and that something must be done about language instruction to correct these deficiencies."

In the resulting flurry of innovation, the ministry also neglected two tenets of good reform, quality control and control groups, without which no one will ever be able to say with any accuracy how well the progressive theories embodied in Year 2000 really serve the interests of children or society. Although some 600 lead schools received special funding five years ago to try out progressive, child-centered techniques, these beacons for Year 2000 were never matched with 600 schools pursuing aca-

demically excellence with traditional or alternative methods. Nor did the implementation of Year 2000 come with any assessment mechanism to ensure that the innovations were actually improving the teaching or learning process. And though Year 2000 arrived in many primary classrooms five years ago, there is still no formal method for evaluating student or teacher performance, let alone the whole program's strengths and weaknesses.

Although one of the program's original documents came with the subtitle "A Curriculum and Assessment Framework" and stated a commitment to "intended learning outcomes," the testing and measuring component got waylaid. Even Jack Fleming, who retired from the ministry six months ago, can't understand the delay. "The assessment process has lagged a bit ... and is not well developed," he says. Others familiar with the ministry say that the British Columbia Teachers' Federation's long-standing mistrust of testing (one not shared by many teachers) accounts for Year 2000's missing assessment component. Consider, for example, this statement by Steve Naylor, past president of the B.C. English Teachers' Association: "Teachers feel that the notion of levels of reading and writing is inappropriate because it leads to the assumption that some students cannot perform certain tasks and that something must be done about language instruction to correct these deficiencies."

But in the absence of proper controls, supporters of the experiment such as Simon Fraser education coordinator Patricia Holburn continue to ask parents to be incredibly forbearing about their children's future: "I hope everyone will let this system run for eight years and then decide if it works."

In contrast to British Columbia's crass decision to innovate without accountability or standards, the state of Kentucky has taken a different stance. Borrowing much of B.C.'s curriculum and the same progressive jargon, it too has revamped kindergarten to Grade 3 with a "learner-focused" face. But unlike British Columbia, Kentucky won't carry school reform any farther until the state has good evidence to do so on the basis of two kinds of assessment. The first, a so-called authentic testing system, requires students not only to solve problems, say in math, but to explain their reasoning in writing.

Such tests, used in conjunction with achievement tests and other formal or informal monitors, are then carefully graded against a common standard. (This system can become highly subjective and inconsistent unless teachers are well trained and the testing carefully standardized.) The state has also given each school a "benchmark" based on test scores, dropout and attendance rates and the

percentage of students who make a successful passage to the workplace. Schools that improve their benchmark performance get monetary bonuses; those that fail either receive intense supervision or get shut down. No such system of accountability exists in British Columbia, and none seems poised to give Year 2000 teeth or purpose even though a version of authentic assessment for writing, at least, is in the works.

What is most damning about Kentucky's resolve to be accountable is that British Columbia could easily have done the same. The province keeps profiles on all of its schools that include the results of tests taken by all students in grades 4, 7 and 10. It also tracks the 20 percent of the student population that moves from school to school. But without any leadership or will, the assessment component of the educational system has been left in limbo.

In many ways, Year 2000's lack of commitment to assessment mirrors its complete devotion to anecdotal report cards. Introduced more than a decade ago as a replacement for letter grades at the primary level, the new reports were to tell parents five things: what their child can do, how these achievements compare to those of children the same age (late or early), what the child can't do, what the school is doing about it and what the parents can do to help. But after a series of consultations with educators, the anecdotal report card lost all of its punch and has since been enshrined in Year 2000 as an advertisement of positives in accomplishments, attitudes and interests. This aversion to honesty has meant that teachers must describe disruptive children with such inventive euphemisms as "Johnny is beginning to use nonviolent methods to solve disputes." In direct reports to students, the critical and constructive has been replaced by the banal and condescending: "It has been really exciting to see you begin to believe in yourself as a writer!" Parent dissatisfaction with report cards now dwarfs all other hostility towards Year 2000.

Incoherent report cards and no accountability are but two of Year 2000's obvious shortcomings. But there is a deeper fault that is mainly apparent to people working in the system. Because the primary program was chiefly designed by teachers, and often very good ones with 20 or 30 years of experience, it comes with a formidable built-in vulnerability. Much of what is suggested in Year 2000 can work, but only with the kind of energy and expertise that would severely test the average teacher or novice. Notes Susan Hargraves, former principal of Sundance Elementary School in Victoria: "A system that depends on people with 20 years of experience in order to succeed is not going to work."

Hargraves has a unique perspective on Year 2000 that is now lacking in most educational quarters. Her public school experimented with many progressive tenets such as multi-aging and integrated lessons long before they became provincial fads, only to learn their real limits. For starters, teachers at Sundance discovered that self-esteem does not spring from accentuating the positive or avoiding comparisons. "We had a kind of conspiracy of what we would tell the kids by overexaggerating the good things." But 10-year-olds who couldn't print numbers one to 10 or identify upper case letters of the alphabet knew that "our enthusing didn't match their feelings. They knew they weren't measuring up." The result was that progressive theory achieved the opposite of its intentions: low self-esteem. "Year 2000 shouldn't mean you don't give children honest feedback," argues Hargraves.

Parent dissatisfaction with report cards now dwarfs all other hostility towards Year 2000.

The other lesson Sundance took to heart was that learning doesn't occur magically. "It isn't enough to remove desks and group children together and somehow expect learning will occur. You need a framework I think direct instruction and whole class teaching are still two of the best ways to help children move ahead." Hargraves, a thick-skinned maverick in the system, would like to see public schools committed to the best of both traditional and progressive methods. "It's not one or the other."

Such common sense should have surfaced long ago had Year 2000 been rigorously debated among educators instead of becoming a religious enthusiasm with utopian ambitions of helping children become "lifelong learners" for the new millennium. Fads in education take on all the appearances of evangelical revivals; dissent is simply not welcome in the Year 2000 camp. "In my opinion," recently wrote Penticton high school teacher Peter Kruse, "the Year 2000 and its proponents are imposing a form of tyranny where criticism is met with the despotism of righteous indignation, where dissent is oppressed by intolerance and ridicule, and where the ultimate effect on the dissenting voices is the harshness of alienation and stress. As a result common sense has become the victim, and we all need to be concerned."

Even school trustees, the system's elected watchdogs, "got blitzed with the gospel of Year 2000," says Ron Adams. When the Salmon Arm trustee

suggested at one annual general meeting of the British Columbia School Trustees Association that there be a debate on the pros and cons of Year 2000, he was abruptly told that "a debate would be inappropriate" because trustees were 100 percent behind the plan.

"Instead of answering the concerns of citizens with respect, certain educators take questions as a form of criticism with the result that the questions go unanswered and more parents groups are formed," says Moyra Baxter. As the president of the B.C. Confederation of Parent Advisory Councils, she supports much of Year 2000 but believes that educators have failed to talk to parents honestly and directly about the program. Even though the councils, another Sullivan recommendation, have the authority to advise schools on any matter, Baxter finds that "the parents are being told that they can't bring certain things to the table."

The ministry of education is now keenly aware of the maelstrom it has unwittingly unleashed among the province's schools. Jerry Mussio, who has been responsible for shepherding Year 2000 for only a year, promises there will be more clarity and consistency in future Year 2000 documents. The failure of anecdotal reports to report anything meaningful is under review, he says. The government also plans to get out of the business of telling teachers how to teach and to provide instead what government is good at: guidelines on expectations, standards and ways to measure them fairly. "The ministry has done a poor job of communicating things in simple terms," admits Mussio.

It is unlikely that such changes, however laudable, can restore the trust that has been lost in the public system or honor the truly subversive spirit of the Sullivan commission. Perhaps the real reason Year 2000 degenerated into a silly track meet characterized by psychobabble about no winners and no losers is because Sullivan intended his adjustments to identify some losers in public schooling.

A school system that truly respected the different needs of different children by offering both traditional and progressive ways of teaching would also have killed public education as a monolithic enterprise addicted to fads, enthusiasms and bigness. But in the process of letting educators set the very policy the public expects them to deliver, the true intent of Sullivan's recommendations got detected and derailed. Instead of diverse community-based schools meeting challenging provincial standards, as Sullivan intended, parents suddenly found their schools participating in one giant Year 2000 track meet where the managers of the system predictably placed the ball in a spot that made them feel good. In the process the status quo conveniently put self-interest ahead of the public interest and the province's future.

Note: In November, 1993, British Columbia changed their policy and discarded some aspects of the Year 2000:

"Those changes which we have found to diminish the quality of education must be discarded. In discussions with parents and the public, some of the education changes since 1988 have been criticized as having:

- been introduced at too rapid a pace,
- not provided enough clear information on the standards expected of children in the public school system,
- diminished the quality of communication between schools and parents. Parents feel they do not know what their child is learning and how well their child is doing" (p. 1).

"The following improvements will be made to the Primary Program for Kindergarten to Grade 3:

- anecdotal reports will be discontinued,
- structured written reports following new specific guidelines will replace anecdotal reports so that parents will know how well their children are doing,
- evaluation will be based on the student's progress towards expectations for their age group" (p. 3).

From: *Improving the Quality of Education in British Columbia: Changes to British Columbia's Education Policy*, Art Charbonneau, Minister of Education, November, 1993. For a copy call Victoria (604) 660-2421.

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