

*WHY AREN'T EFFECTIVE TEACHING TOOLS WIDELY ADOPTED?*

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Effective educational methods are available. They have been available for a long time. They are mostly behavioral, structured, fast paced, and require a high proportion of regular daily practice. Given this, it is irresponsible to invest more public funds on educational research without first installing the powerful results of the research we have already bought and paid for.

The fate of highly productive educational methods in public instruction is a national shame. No highly effective educational method or program has ever been widely adopted in North America. I didn't understand and accept this until 1983, when I read the results of Project Follow Through and how they had been ignored and covered up (Car-nine, 1983; Engelmann & Carmine, 1982). Here, the clear-cut results of the most extensive and most expensive educational research ever conducted were being ignored. You couldn't even get the reports out of Washington. These were the results of investing public funds, and they had run out of reports! They couldn't find them! "Call back next Monday!"

To me, this was scandalous. At the time, we were getting precision teaching tried school-wide and district-wide, but had never reached the point of Follow Through's massive demonstrations of many city-wide programs, nor compared results among nine different teaching models, as Follow Through did by the end of the project. The two behavioral models (direct instruction and behavior analysis) produced the largest gains in basic skills. The self-concept oriented models actually worsened the student's achievements below the average curriculum control schools. This stopped me dead in

my tracks! If precision teaching continued and progressed to the point of city-wide public school comparisons, with control groups, independent evaluation, and was found superior, it would still be ignored!

Programmed instruction, the personalized system of instruction (PSI), direct instruction, and precision teaching have all been terminated where they were successful. The PSI approach was killed at North Eastern and at Georgetown, and is restricted to only one course at the behavioral mecca in the Department of Human Development at the University of Kansas.

It is hard to keep your humor when you accept the fact that you invested 25 years in developing methods that can help your nation out of the educational abyss into which it is racing. You made these methods inexpensive. You made them dear. You helped illustrate their worth. You made them attractive. Yet they are ignored or rejected because of popular myth and bigotry. I should have known this when I started in 1965, but I didn't. I went blissfully on even though others tried to warn me.

*Remember Turnley!*

One of the strongest warnings came to me in the late 1960s from Winifred Stewart, director of the Edmonton, Alberta, School for the Retarded. Winifred took me to dinner after my lecture to the Alberta Teachers Association and my workshop at the school. She was an elegant British Canadian. With warmth and grace, she took my hand, looked kindly into my eyes, and told me to always keep my presence of mind and my humor. I laughed and said, "Why do you tell me such a thing?" She said, "Because you will need to fall back on humor some day." Then she told me the tragedy of Francis Turnley.

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When Winifred was a young woman her son was in his early teens and still couldn't write his name. Professional educators and schools had been unable to accomplish nothing. Her son could neither read nor write, although he spoke quite well. Winifred met Francis Turnley, who had just developed a method for teaching reading and writing called "sonsils." Sonsils were the basic sounds of English. They were not consonants and vowels, they were not consonant-vowel-consonant words. They were the sounds that you hear babies babbling. They were the sounds of English. There was not an infinite number of them, as some might think. I have forgotten now, because a student borrowed and lost my sonsils book and I have never been able to get another copy, but there were probably between 50 and 90 most used sonsils. To me, at the time engrossed in the functional analysis of behavior, they seemed to be the functional parts of spoken English. What a wonderful idea! To build English on the spoken sounds of babies! Winifred gave me an autographed copy of Turnley's book the next day.

In a few weeks, using sonsils at home no more than 30 minutes a day, Winifred had taught her son to read and write. This success influenced Winifred to dedicate the rest of her life to working for retarded children and adults. She built an exemplary center for retardation, and is now a legend in Alberta, and most of Canada.

Sonsils were tried in many schools and found greatly superior to the existing methods for teaching reading and writing. Sonsils were even considered for curriculum adoption by the province of Alberta. Then, politics intervened, and sonsils were voted down. Francis Turnley, despondent, committed suicide. I still can feel Winifred's warm hand and concerned gaze as she concluded, "Remember Francis Turnley, and keep your humor and wits about you." "Remember Turnley!" doesn't have the rhythm of "Remember the Alamo!" However, it has rallied me well over the years.

#### *Federal Grants are More Often Traps than Seeds*

The idea that federal money is seed money and that the sown educational seeds will continue to

grow after the federal funds stop is appealing but wrong. The school district would lose face if it could continue the program on its own without the federal funds. Why did they take the money in the first place if they can do it with local funds? A more realistic metaphor for "federal seed money" is "federal trap money." If you want to kill an educational program give it a federal grant. You can kill with "kindness." This principle is known by the forest service. It is against the law to feed wild animals from your doorstep, because they become dependent upon your feeding and can no longer survive in the forest on their own. When you leave, there is no food on the doorstep, and the now-dependent wild animal dies. You have trapped the animal by making it dependent on external, temporary sources. When the politically motivated federal funds dry up, which they are bound to do as the funds rotate elsewhere, the dependent innovative teaching program dies. This is the way Project Product (Sokolove, 1978) was trapped, then killed.

#### *Work Ethic, Discipline, and Competition Avoided in Academics*

One problem with adopting effective teaching tools is the same problem that we have with physical exercise. We all know that we would be happier, healthier, stronger, and longer lived if we exercised regularly. We all know how to exercise. We are all able to exercise. But most of us lack the discipline to exercise daily.

The word discipline comes from the Latin word for teaching. At one time people realized that academic learning required regular practice, and that it was hard work. Webster's unabridged dictionary lists seven meanings for discipline: a) teaching, instruction, tutoring; (b) a subject that is taught; (c) training or exercise that corrects, molds, strengthens; (d) punishment; (e) control gained by enforcing obedience; (f) rule or system of rules; and (g) an orderly or regular pattern of behavior (Gove, 1961). Now, most educators and the public see discipline as a bad word and equate it with the fourth and fifth meanings, with punishment, with enforced obedience. Now, any educational approach that smacks of discipline and requires regular practice is also avoided. Most educators have bought the

myth that academic learning does not require discipline—that the best learning is easy and fun. They do not realize that it is fluent performance—the result of learning—that is fun. The process of learning, of changing performance, is most often stressful and painful. Projecting learning on progress charts often reduces this stress, because the learner sees fluency coming closer and closer each day.

*Work Ethic, Discipline, and Competition  
Welcomed in Athletics*

It is amazing that educators and the public accept the need for disciplined regular daily practice in the performing arts and in athletics, yet reject it in academics. The desperate drive to increase university enrollment has forced faculties to imply falsely that a 3-hour class 1 evening per week can accomplish as much as three 1-hour classes on Monday, Wednesday, and Friday. Six half-hour classes per week would accomplish even more performance gain than three 1-hour classes. Parents regularly drive children great distances for daily gymnastics or swimming practice, yet they will not drive any distance for daily mathematics or computer practice. Regular daily coaching and practice are accepted in athletics but rejected in academics, primarily because academics doesn't keep score.

Posting personal performance scores with names is the rule in athletics and is against the law in academics. Competition is welcomed in athletics and is seen to strengthen participants. Competition is avoided in academics and is seen only to weaken students. Even graduate students require that their precious egos be protected with "secret" student numbers when examination scores are posted. Imagine athletics when, by law, the student daily paper must headline, "11044291 WINS ALL CONFERENCE MILE!"

*Public Needs Learning but Wants  
Entertainment*

I finally decided that I had worked 25 years to help fulfill the great *need* for education. I had not even considered the American public's *want* for education. I had assumed that if there is a great need then there must be at least a little want, but I was wrong. In my last few classes in educational administration I used the following parable to contrast need and want.

Two young people were planning a business venture. They noticed that the majority of the houses along the highways around their town needed roof repairs. There were no local roofing contractors. So the partners invested their savings and set up a roofing repair business. They did poorly and were forced out of business 2 years later. Despondently driving around their town looking for a new business venture, they noticed that the majority of die roofs still needed repair. However, every house with a bad roof now had a new satellite dish in the front yard! Our partners had confused need with want. The townspeople needed roofs, but they wanted a wider range of entertainment than their local stations provided. The United States needs learning, but it buys more entertainment.

I was shaped by my teacher audiences around the country to entertain them in keynote speeches. My "best selling" presentation was called "accentuate the positive." I played over the public address system Elk Fitzgerald singing Harold Arlen's song entitled "Accentuate the Positive." The lyrics were, "You better ac-cent-uate the positive, e-lim-inate the negative, latch on to the affirmative, don't mess with mister in between." As Ella sang, I projected on four overhead projectors a picture of Ella and Harold and the following three matched transparencies:

Accentuate the Positive

Circle perfect answers  
Learning opportunities  
Commend the views of . .  
Offer a solution Share your  
contribution

Eliminate the Negative

Cross out errors Number  
wrong Criticize the views  
of . . . Reject the null  
hypothesis Defend your  
thesis

Mister In-Between

Percentage correct  
Letter grade "B" Top  
20% of the class  
Superior student  
Needs help

Then I went down the lists, example by example, showing how public instruction accentuates the negative, messes with mister in-between, and never accentuates the positive. I showed how each example could be translated to a positive measure. I then showed that of Benjamin Franklin's 13 reported virtues, 9 (69%) were negative. Of the 16 adjectives used in describing the mentally ill, 15 (94%) were negative, and of the 11 adjectives describing the mentally retarded, 8 (73%) were negative. Then, I showed the Ten Commandments to be 70% negative, 10% mister in-between, and only 20% positive. I dosed with "The Positive Ten," Methodist minister Henry August Tempel's translation of the decalogue into positive thou shalt (C.W. Tempel, personal communication, March 1976). Did this produce any more teachers counting perfect answers rather than circling errors? Did any teachers abandon percentage correct and start charting frequency correct and incorrect? No! All "accentuate the positive" did was entertain them, and as a reward they rated me highly on their evaluation sheets.

We later developed what we called "Do Packets" for workshop and lecture participants to try a few of the precision teaching tools that we were describing. The "Do Packets" produced a little more effect, but we were punished for making the participants work by low evaluation sheet ratings.

It is interesting that California is the center of the entertainment industry, has the largest number of Olympic athletes, and is always dose to the bottom on scholastic achievement. Paradoxically, many of the "new," "most promising," educational approaches emanate from California. Then within a few years they also tarnish, showing themselves to be ineffective, but they provided entertainment!

*Sesame Street—Informing Entertainment, but Not Education!*

It was not until January 1990, after I had retired from 25 years of active teaching in the School of Education at the University of Kansas, that I realized *Sesame Street* was very poor education. Produced by the Children's Television Workshop, it

is certainly nice, multicultural, politically correct child entertainment, but bad education. Prior to that time I did not see it as a destruaive educational influence. Perhaps I was blinded because fellow faculty members had grants to study educational television and had found it beneficial. It would have been politically incorrect to find fault with *Sesame Street*. However, after retiring in January 1990, I was no longer intimidated by my fellow faculty members and had time to watch a few segments of the program. I suddenly realized that *Sesame Street* was a danger to effective education. It produced absolutely no viewer performance, yet pretended to educate. Mr. Rogers' television show asks the viewers to do things at least once or twice each show.

Think over the following "what if?" Suppose *Sesame Street* had been developed by effective educators, from Montessori, through Dewey, Skinner, Keller, to Englemann. Big Bird would have told the viewers, "Go into the kitchen, bring back a large pot. A large pot like this one. Good! Now go back into the kitchen and bring back a small pot. A small pot like this one," and so forth. After a season or two of such instruction they would have probably sold a \$39.95 *Sesame Street* Learning Kit of safe, plastic objects to work and learn along with Big Bird, Kermit, Grover, and the others. After a few seasons, *Sesame Street* would have sold a \$99-95 *Sesame Street* Learning Box that plugs into both the wall and the TV. The learning box would have buttons and knobs and handles for viewer manipulation and would pick up signals from the TV; then truly interactive learning would be underway. A year or so later *Sesame Street* would sell a \$199.95 *Sesame Street* Learning-Remote that plugs into the wall and the TV, and a modem that plugs into the telephone during program transmission. Now *Sesame Street* would collect learning results from its viewers across the country. With these results, more effective learning programs could have been experimentally redesigned. The interactive exdtment and dollars now squandered on Nintendo® might have been invested in academic learning.

Unfortunately, *Sesame Street* was designed by

entertainers. A look at the credits scrolled at the end of each program gives this away. They are the same entertainment credits as those of any TV soap or sitcom show. Nowhere are there academic, educational, or research credits. There is no problem if *Sesame Street* is seen for what it is, nice child entertainment—pure and simple, couch-lizard amusement. However, the danger comes when we give *Sesame Street* awards for education and speak of its educational value. I have had teachers in my classes, under *Sesame Street* influence, spend their evenings sewing buttons on socks to make puppet eyes, rather than customizing student practice sheets. Next morning the teachers pulled their sock-puppets over their hands and tried to puppetize their classes into reading. These teachers had not realized that reading comes from a lot of reading practice. *Sesame Street* had convinced them that reading can come from viewing talking puppets and dancing letters. That is educationally dangerous!

*Effective Teachers are Punished—  
Jaime Escalante*

One of the few classroom teachers in North America to gain attention for the superior accomplishments of his or her students is Jaime Escalante, formerly of Garfield High School, East Los Angeles (Mathews, 1988). His high school class of disadvantaged barrio students performed so well on the National Advanced Placement Calculus Examination that the Educational Testing Service, surprised by the high scores from a barrio school, and finding identical errors made by several students, accused the students of cheating. A make-up exam was given with strict monitoring by Educational Testing Service staff. Escalante's students still passed the exam with flying colors. Escalante had drilled his students, made them respond rapidly in public, taught them mathematical tricks, and had both ridiculed and entertained them. However, the key element was work, and a lot of it.

Teachers of the performing arts at the school complained that Escalante's students were spending too much time on academics. Escalante's teaching should have been analyzed by the state and by the University of California as an exemplar (Gilbert,

1978). Instead Escalante, although given brief personal fame by the media (Warner Brothers, 1988), was scolded, punished, and removed from departmental chairmanship. In desperation, he has recently moved to another teaching position in the schools of Sacramento.

*Illegal Local Suppression of Teacher and  
School Accomplishment*

Not only are teachers punished for effective instruction, but the effects of their instruction are hidden from public view. In every school district in the country pupil achievement scores are available for averaging by teacher, by subject, and by school, but only the averages by district are released to the public. And there seems to be press collaboration in making it difficult to compare the district results with neighboring districts. The *Lawrence Journal World* printed the district test scores for Lawrence, Kansas (a university town). It did not print the test scores of neighboring, more rural districts until a week later, and then did not include the Lawrence scores for comparison. You guessed it! The Lawrence district achievement was below that of a less advantaged neighboring district. Letting the public see these differences could have a drastic effect on the attractiveness of the town to prospective citizens and businesses.

Achievement test scores are public property. It is illegal for this information to be hidden from public view. Go to your local school district office and try to find out which second grade teacher produced the highest achievement last year, and the years before. You can't find out! Districts are afraid that if word gets out that one second grade teacher is more effective than the others, there will be a rush by parents of first graders to get their children in that second grade class next year. And, horror of horrors, this might cause enrollment problems and parent displeasure. So rather than use this information to reward effective teachers, retrain and help less effective teachers, and model and analyze the exemplars, teacher accomplishment is buried.

The accomplishment of band directors and football and basketball coaches cannot be hidden. They are teachers in the same system, and their accom-

plishments are published weekly; but again, the discrepancy between athletics and academics is clear. Athletics teaching is accountable, academic teaching is not. Many parents move across town or to another town for their child to be in a school with a more effective football coach. Shouldn't they have the same right to move to a school with a more effective math teacher? If parents could find out, many would move, but the school and town administrators don't want that.

### *How Can We Promote Effective Teaching Tools?*

We can bypass public instruction with private, for-profit learning centers with guarantees and learning commissions (Johnson & Layng, 1991; Maloney & Humphrey, 1982). We can transfer our teaching technology to industry (Binder & Bloom, 1989; Lindsay, 1988; Pennypacker, 1986). We can publish more widely and promote our measurably more effective tools (Binder, 1990; Binder & Watkins, 1989; Watkins, 1988). We can set up formal academic advocacy for children to adjudicate and legislate action (Bateman, 1991; Maddalena, 1991).

Personally, I am not going to invest any more than the 25 years I have already invested in trying to improve public education. Sig Engelmann is angry and still banging away (Engelmann, 1991). I will help Sig and others with my support and advice, but my major efforts will be in industry. I will offer standard celeration charting methods to North American industry as an improvement over the cumbersome statistical process control methods used in total quality management. I will call this "Quality Navigation" and work to make it as effective in monitoring and improving product quality as it was in improving learning. We know our industries *need* more effective quality management methods; let's hope they also *want* them.

No matter what happens in public education, keep it light, stay loose, remind others of Project Follow Through, and always "Remember Turnley!"

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