A Brief History of Programmatic Educational R&D

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Educational R&D in general is not now and never was "programmatic" (**systematic:** following a plan or program). The concept is foreign in educational research circles, and the educational development circle is currently a zero. However, there is a thin programmatic thread that can be traced back to the days of World War II. I was a child at the time, but by happenstance have been eyewitness to the events along the way. That they occurred can be independently verified, but the story is inescapably in part my story. The best I can do is to minimize the personal aspect of the history.

It began in 1948. "Hap" Arnold, Secretary of the Air Force recognized that the military needed independent Research and Development. They called it RAND and the name stuck. RAND was instrumental in designing an early "star wars" defense system, a DEW (early warning defense) system with radar stations stretched across Alaska and Canada. RAND and the military agreed that RAND should stick with research and analysis—a "think tank," not a "do tank." So a new non-profit corporation was formed. Again they kept the name simple: System Development Corporation (SDC).

(Not part of the history, but a relevant footnote is the rest of the history of SDC: The DEW line was never completed. By 1969, SDC's relationship with the Air Force became contentious, to put it mildly. SDC not only operationalized the concept of "system," it operationalized the concept of"software." And it developed the software foundational to the IBM 360 computer. At the time, SDC had the strongest Info Tech capability in the nation. Moreover it had $13 million in the bank, quite sufficient start-up capital at the time. To resolve the stormy relationship between the Air Force bureaucracy and SDC, DOD agreed that SDC could go private. But that was not to be. Acting on the "encouragement" of IBM, the California Attorney General ruled that if the non-profit were to go private, it would have to pay the State income taxes on all the moneys the non-profit corporation had received throughout its history. This sum would have exceeded the $13 million. So for all practical purposes, SDC was "cleansed.")

SDC operated under a "sole source contract + fixed fee" relationship with the Air Force. The fee was initially 15%, which amounted to more than loose change. Using these discretionary funds, SDC set up an internal research program with three divisions: software, library support (the beginning of Info Tech) and education. The Ed division was divided into higher ed and el-hi. David Ryans was hired to head the Division. Dave had been Head of the Cooperative Test Division at College Board before ETS was established. CTD constructed and distributed high school achievement tests. ETS chose to put chose to focus exclusively on college aptitude rather than high school achievement. Dave accepted a position at UCLA and used his College Board contacts to obtain the first large foundation grant for educational research," The Teacher Characteristics Study," from the Grant Foundation. (Grant made his fortune as the founder of "25 cent stores,") As I recall, the grant was for something like $50,000 for 5 years. The Study gathered a lot of information about teachers that is still relevant today, but it suffered from the

fact that there was no dependent variable—no measures of student achievement or anything else; all input, no output.

Dave happened to be the faculty advisor on my Master's Thesis, which was a factor analysis of 32 ed-related census variables. I had been an undergrad history major, and my career plan was to teach middle school social studies. (Factor analysis was a newly invented methodology, and proponents held that it was the key to unlocking the "faculties of the mind," and also for identifying the factors underlying all sorts of other phenomena. This turned out not to be the case. But the 32 x 32 correlation matrix was the first ever run on a computer. The software was written by Dave's statistician who went on to head computing at National Cash Register Co.)

Dave told me about a fellowship, "The AERA Fellowship in Educational Measurement," that was underwritten by the predecessor to Harcourt General, "World Book Co., Test Division." The Fellowship paid $2,000 a year, which could be used to pay tuition at any New York City University and included a one-day a week internship at the Test Division. I applied for and was awarded the Fellowship. (I was later told by Oscar Buros, Founder of the Mental Measurements Yearbook, that there were only 4 other applicants, but that I was head and shoulders above all the rest—for what that was worth.)

I studied measurement with Bob Thorndike, the son of the founder of educational psychology, E. L. Thorndike. The WB Test Division in 1955-57 was housed on the second floor over a bowling alley in Yonkers, NY. The professional staff consisted of four "test editors," none of whom had a doctorate. ETS was housed over a men's clothing store in Princeton. The entire ETS professional staff was not more than 10-15.

The small WB staff was turning out periodic revisions of the Metropolitan Achievement Tests and the Stanford Achievement Tests. I had a prominent role in the construction and norming of Metro3. The way the "achievement testing business" worked at that time, was that the Metropolitan test "authors" were the Testing Directors in very large cities across the U S: New York, Chicago, Detroit, Los Angeles and a few other cities. These men reviewed the test items, but all the work was done in Yonkers. The test battery was used in the districts, and because the Great City Schools at that time **were** great, many other districts followed suit. The authors received royalties on national test sales. Lewis Terman and a few other professors that Terman cut in had academic status analogous to the Testing Directors, and they enjoyed the same royalty relationship in connection with the Stanford Achievement Test.

As a young guy of 25 from the West coast with a wife and a 3-yr old little boy, NY was a great experience for all of us. I learned the theory and practice of testing studying with Bob Thorndike, and I learned how the testing business operated interning at WB. I didn't know anyone in the Big Apple except Harry Silberman who was a year ahead of me at UCLA. The boom in University jobs was yet to come. A job opened up in 1954 in a small institutional research office of the City Colleges of NY, and Harry got the job. He didn't yet have his doctorate and had planned to get it, while working as TA for an ed psych prof. When Harry suddenly left UCLA, I was working part time in the Ed Library typing library catalog cards at $5 an hour. I got Harry's TA job.

Harry and his wife had two little kids, and Harry and I shared the same professional interests, so we spent a lot of time together. In 1956, Dave Ryans then recruited Harry to head the El-Hi Ed R&D at SDC. In 1957, I took a job as Director of the Testing Service and Assistant Professor of Ed Psych at Arizona State University. ASU had grown up from a Normal School, and was a State College at the time I joined. Aspiring to be a "research university" with largely a non-research faculty, ASU was "wide open" for R&D. Obtaining Cooperative Research Act (1954) grants and then National Education Defense Act (1958) grants, a colleague and I formed the ASU Classroom Learning Laboratory. We had enough funds to hire 5-10 grad students, and to employ a full-time PhD to supervise the operation under our direction. (In those days the entire US Office of Education research staff consisted of 4 "Contracting Officers. " Each time a grant was awarded, a Contracting Officer would travel to the campus for a few days and actually write the terms of the contract for the research study.)

The Classroom Learning Laboratory was conducting what today would be viewed as "very large" controlled experiments, working with districts as the unit and disaggregating effects down to school, teacher, and student levels. The findings were interesting, and they produced journal articles, but not much else. The prime concern of the CLL was early reading instruction, which was also the prime concern of Silberman and his crew at SDC. Harry and I both reached the same conclusion at the same time. To get any reliable effects out of Educational R&D, either teacher ed was going to have to be radically modified OR ed R&D was going to have to be radically expanded.

This was about the time that the Elementary and Secondary Education Act of 1965 was being formulated. The logic of the Act was very simple. Several people had a hand in the Act, but the fingerprints of John Gardner, then Secretary of HEW were all over it.

The "problems" in education were in large urban areas and with poor and minorities. That was Title I.

The only organized educational lobbying group at the time were librarians. School Libraries are a good thing. That was Title II.

School people were contending that "we have lots of good ideas, but they aren't being 'disseminated.'" That was Title III.

State Departments needed to be strengthened, so they got a slice.
That was Title V.

But it was not difficult to conclude that although this was the best that could be done, it wasn't going to have much effect on El-hi schooling. Educational R&D Centers had been established at major universities, but as the former Dean of the College of Education at the U of Chicago, Gardner knew well what professors could and would do.

For a model, Gardner looked to the Laboratories of the "National Advisory Committee for Aeronautics (NACA)," the precursor for NASA. In Gardner's view, domestically the best and only thing the Federal Government can do well is to write checks. Scattered around the country regionally, the NACA Labs were Federally-financed but regionally managed. The NACA model was extrapolated to Regional Educational Laboratories in one paragraph.
That was Title IV.

The legislation made no mention of the Laboratories other than a one paragraph provision that is worth quoting in full:

"CONSTRUCTION OF REGIONAL FACILITIES FOR RESEARCH AND RELATED PURPOSES"

There is authorized to be appropriated over a period of five fiscal years beginning with the fiscal year ending June 30, 1966, $100,000,000 in the aggregate, to enable the Commissioner to carry out the purposes of this section. Sums so appropriated shall remain available until expended for payments with respect to projects for which applications have been filed under this section before July 1, 1970, and approved by the Commissioner before July 1, 1971.

a. Whenever the Commissioner finds that the purposes of this Act can best be achieved through the construction of a facility for research, or for research and related purposes (as defined in this section), and that such facility would be of particular value to the Nation or a region thereof as a national or regional resource for research or related purposes, he may make a grant for part or all of the cost of constructing such facility to a university, college, or other appropriate public or nonprofit private agency or institution competent to engage in the types of activity for which the facility is to constructed, or to a combination of such agencies or institutions, or may construct or make arrangements for constructing such facility through contracts for paying part or all of the cost of construction or otherwise. The Commissioner may, where he deems such action appropriate, make arrangements, by contract or otherwise, for the operation of such facilities or may make contributions toward the cost of such operation of facilities of this nature whether or not constructed pursuant to, or with the aid provided under, this section. Title to any facility constructed under this section, if vested in the United States, may be transferred by the Commissioner on behalf of the United States to any such college or university or other public or nonprofit private agency or institution, but such transfer shall be made subject to the condition that the facility will be operated for the purposes for which it was constructed and to such other conditions as the Commissioner deems necessary to carry out the objectives of this title and to protect the interests of the United States.

Definition:
The terms 'construction' and 'cost of construction' include (A) the construction of new buildings and the expansion, remodeling, and alteration of existing buildings, including architects' fees, but not, including the cost of acquisition of land or off-site improvements, and (B) equipping new buildings and existing buildings, whether or not expanded, remodeled, or altered.

Clearly the Congress was thinking big. The legislation **appropriated** $100 million for construction over a five year period. The cost of the Viet Nam war took its toll and the appropriated amount was reduced to $32 million, but even that was a very large amount for the time. This amount was further trimmed by the time the money was actually spent. But buildings were built on three University campuses that included housing for R&D Centers, and three existing commercial buildings were remodeled as regional labs. SWRL in Los Alamitos, CA was the first and only Laboratory designed and dedicated exclusively for educational R&D.

The latitude throughout the legislation is impressive, particularly when compared with the micromanaging of current Federal education legislation.

In California, the salient issue for Laboratory proposals was whether the State could be split into two regions. At the time, the California Superintendent of Schools was a radical right wing conservative and the Governor was a liberal Democrat. With one Lab in the State, the State Department of Education would have controlled the Lab. The SDE and Counties teamed with John Flanagan, founder of the American Institutes for Research to prepare a proposal. SDC won the support of Los Angeles City School Superintendent, Jack Crowther. Bob Gagne of UC Berkeley headed a Northern CA group.

Gardner sent an Assistant, Al Bowker, (later President of NYU) out to visit the principals. Bowker ruled that there could be two Labs. In the subsequent competition, planning grants were awarded to SDC and to UC Berkeley. The expectation was that Harry Silberman would direct SWRL. I expected to stay at ASU. I was active in writing Lab the proposal and worked with Harry at SDC in the planning which went from Feb 23 to June 30 under a grant for $900,000. Plenty of money. Although we were supposed to be "planning," we hit the ground running, hired "permanent" staff, and prepared for a tryout of a Kindergarten Reading Program (KP) in the fall.

Silberman, at the last minute, decided that he wanted to stay at SDC. Jack Crowther told the Board that he would be interested in becoming Director in two years. I was Deputy to Harry and there was no one else around, so the Board appointed me Lab Director as a "Placeholder."

The development of KP went from 3 schools in Pasadena, to 3 schools in Long Beach, to 5 schools in each of 5 school districts. At the same time we were extending and trying out instruction with successive cohorts to have a K-3 program in Reading. And broadening to coordinated programs in Spelling Composition and Drama & Public Speaking to have a comprehensive Communication Skills program. The development also included a Training and Installation component that used "trainers of trainers" and a Quality Assurance/Accountability Verification component.

Meanwhile in Washington, people wanted to see the results of "all the money that was being spent on Labs." In the fall of 1970, Eliot Richardson, then Secretary of HEW, asked USOE for a "list of 10 lessons learned from educational R&D in the last 10 years." KP was the only "lesson" that was directly implementable.

Things were not going all that well in other parts of ESEA. Title II and Title III had been combined, but by the early 1970s it had become painfully clear that school districts didn't actually have any "good ideas" They had some "good people" who had ideas, but the ideas couldn't be exported. Title III was being phased out, but there was some money left to spend.

By this time SWRL had run a competition among publishers to license the Communication Skills program for a period of 5 years. Actually, it wasn't much of a competition. Publishers in general had no interest in "competing" with one another for anything. Ginn had been bought by Xerox and Xerox was cash rich and "socially responsible" at the time. Only Ginn and a small company, Van Nostrand Rinehold had any interest, and SWRL awarded the license to Ginn.

SWRL worked with USOE officials to devise a simple but large-scale plan. A USOE official sent a letter to each Chief State School Officer in states west of the Mississippi River informing them that if they were Interested in installing KP to teach reading to up to 25 % of their kindergarteners, OE would give them a grant to defray the cost of materials. The initiative would be fielded in 1972-73 and replicated with a second cohort in 1973-74. Any interested local district could contact SWRL for an Information Kit and further information. Districts could order the program materials from Ginn, as they would order any other text material.

Each District would appoint a Program Coordinator, who would attend a half-day orientation meeting at one of several locations throughout the West. At the meeting they would be prepped and receive the films, filmstrips and other material SWRL had developed for them to use in prepping participating Kindergarten teachers. KP instruction was organized in 10 Units. At the end of each Unit, the teacher would record the date, administer a one-page Criterion Exercise to each child, and mail the sheets to SWRL. A brief beginning-of-year and end-of-year test and a school information sheet were the only other requirements. And for doing these modest chores, USOE waived the Title III evaluation reporting requirement for each district.

No extrinsic testing was necessary. The Instructional Accomplishments were transparent to the child, to parents (the children "owned" their books), and to the teacher. SWRL sent interim reports to schools, districts, and state departments of education, and an end-of-year report to each along with a brief interpretive guide.

The initiative involved 18 states, over 300 districts, over 2000 schools and over 100,000 pupils. USOE set aside $1.3 million for the 2 year period. The marginal costs for a full year program were less than $7 per child.

The conclusions drawn from the second year replication are on the following page.

EFFECTIVE IMPLEMENTATION

The results of the second-year installation strongly confirm the creditable and credible instructional success reported for the first-year installation of the Kindergarten Program. The effects of schooling appear not only replicable and reliable but impressive when instruction is supported by well-developed instructional products produced by programmatic R&D. Such programmatic R&D has direct positive effects on schooling, and schooling coupled with programmatic R&D has strong effects on students.

An instructional product, like any product, can be used poorly; implementation can fall apart. However, over the two year period, there is no indication that implementation failures occurred. Rather all information regarding the second-year installation indicates increasing implementation success. Schools appeared to use the Program during the second-year with greater ease and effectiveness, as the installation "settled down." Evolving patterns of program emphasis, for example, appear to stress earlier and more sustained use of the Beginning Reading Program and correspondingly less emphasis on the Instructional Concepts Program.

At the end of the two years, there is every indication that the results obtained with the Kindergarten Program are under the instructional control of the schools. That is, schools using the Program are in position to determine the instructional effects they wish to achieve and have an accurate picture of the emphasis required on their part to produce these instructional effects.

Overall, there are indications that user groups displaying the lowest levels of proficiency in 1972-73 showed increased effectiveness in the second-year of program implementation. These include minority groups, ESEA Title I eligible schools, lower income levels and urban and inner city locations. However, there are still signs of subtle but distinct means by which children in such settings are inadvertently treated disadvantageously in instruction. By identifying educational disadvantages in terms of conditions within rather than outside the direct discretion of schools, it should be possible to counter and eliminate the unintended negative consequences of such inadvertent treatment in the future. With well-developed products it appears that equal educational opportunity can be provided by simply providing common instruction that places far fewer demands on schools and the public than conventional views of compensatory education imply.

In short and in sum, the findings reported here show that schools can instruct effectively and reliably and that they can implement the products of programmatic R&D economically, efficiently, and to the benefit of the nation's children.

People had been asking for “results.” We gave them exactly the evidence people had been asking for.

What happened?

No one in either the R&D community or in the school community was in the least bit interested in the findings. The “Coleman Report” in 1966 had concluded that schools had very little impact on students. This was a convenient belief for all interests at the time, and it remains a popular belief today.

Ginn milked the market that had been established with the initiative. But Xerox fell on hard financial times. Moreover, sales of the Communications Skills Program were cutting into sales of Ginn’s overall portfolio. In 1979 Ginn released a new edition of its “old” basal reading program, and withdrew all publication of the SWRL program.

That ended that. But it didn’t end the programmatic R&D thread.

In the late 1970’s, SWRL again took advantage of aiding as the Federal government was closing a program deemed to be failing. This time the Feds were in the process of closing the last remnants of the Office of Economic Opportunity‘s Community Services Administration. From the prospective of Programmatic Ed R&D it was another opportunity to demonstrate reliable instructional accomplishments on a large scale, while at the same time clarifying “sticky” educational issues—this time the focuses were on remedial instruction in reading and math at the Middle School level and on the interpretation of achievement test results. The nature of the study can be sketched by three excerpts from the published journal article, shown on the following page.

Not All Achievement Tests Are Created Equal

The study was conducted as part of a project that emerged through an inter-agency agreement between the Community Services Administration and the National Institute of Education. Under this agreement, the Southwest Regional Laboratory contracted to develop instructional resources and the related technical assistance necessary to establish Basic Skills Learning Centers (BSLCs) in schools serving rural areas in each of the 19 states west of the Mississippi.. Elementary schools (488)deemed to be neediest by the districts (145) who agreed to take part in the project established and operated BSLCs in reading and mathematics during the 1977-78 and 1978-79 academic years. Approximately 187,000 students judged by school personnel as needing remedial instruction participated in 1977-78, and 208,000 students (some continuing from 1977-78) participated in 1978-79.

The implication of the results for program evaluation purposes is straightforward. They indicate that the instructional program for each group taught what the participating school and kit purported to teach. When the instructional scope was definite, the proficiency attained was uniformly **high.** When the instructional scope was indefinite, profi-ciency was only moderately high. ……..

In closing, evaluation results derived via use of the testing guidelines recommended here should place the instructional efforts of students, teachers, and schools in a much more positive light than the results of the recent, past (e.g.,Averch, Carroll, Donaldson, Kiesling, & Pincus, 1972; Bridge, Judd, & Moock, 1979; Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Jencks, Smith, Acland, . Bane, Cohen, Gintis, Heyns, & Michelson, 1972). These studies, based almost exclusively on Standardized Achievement Tests as output measures have caused great damage to the enterprise of schooling. Although the damage has been severe, the prospects are that it can be reversed. Better information about current school program accomplishments is forthcoming and should result in further improvements to these programs. This

History--Continued

Again SWRL regarded the findings as "gee whiz." Again no one else did. Politics ruled. Programmatic R&D was in the maelstrom of national politics, academic politics, gay politics, bureaucratic politics, and other brands of politics. Up until 1986, SWRL continued to deliver "gee whiz" R&D reports which whizzed away with no one paying any attention.

Nationally, Labs fought for survival. The initial laissez faire policy regarding "regions" and the closing of some Labs for poor performance had left some parts of the country uncovered. At the Labs' initiative, the National Institute of Education agreed to divide the country into 10 regions and hold an open competition for 5-year contracts.

Despite the fact that the specs for the competition explicitly prohibited "development" of any sort, the SWRL written proposal was the highest rated of all proposals in the country. But the ratings also involved a site visit. The rules for the site visit specified that all questions would revolve around the written proposal. However, the first question from the team was, "What's the best thing SWRL has done?" I was totally caught off-guard, and viewed the question as a ploy to trick the staff to start talking about the "no-no," Development. I said that the question was out of compliance with the specs for the visit and asked the Contracting Officer, who was in charge of protocol, for a ruling. The visit team convened in another room and decided to go on to the next question. I won the ruling but lost the competition. The final proposal rating was reduced by just enough to lose the contract.

I left the Lab, which was a big event for me at the time. But the big event in the history of programmatic educational R&D was the action of the new management of the Lab. Viewing Educational R&D as "dead" and wanting to free up as much Lab space as possible to rent out for income, every product that had been developed and every research report that had been written was dumpstered. This would have been the ignoble ending of Programmatic Educational R&D, but for a compensating event.

Ralph Hanson joined SWRL early on in the Lab's history after getting his doctorate studying with Ben Bloom at the University of Chicago. Ralph was the Chief Technical Officer at SWRL, and we worked closely together. Ralph could see the handwriting on the wall, and left the Lab for a Professorship at the University of Tulsa. However, he had kept copies of all the records of the 1970's KP studies. The kindergarten kids had now reached the senior year in high school. Ralph applied for and received a grant of $100,000 from the Department of Education to conduct a follow-up study. He happened to learn of the award just at the time the Lab management was cleansing all traces of R&D. When he contacted the Lab to get copies of the program he was told that he better hurry because they were in the dumpster. So only a dumpster dive saved one copy of the Kindergarten Program.

The follow up study involved 20 of the largest school districts that had participated in 1972-73, and some 2000 former K participants and a matched-control group of an equal number attending schools in the same district who did not use KP. Every relevant consequence Hanson and his graduate student

Donna Farrell, who was co-investigator in the study, included every kind of outcome measure that came to mind. The 16 indicators ranged from standardized reading comprehension tests and a vocabulary test, to interest in reading, to delinquency, and difficulty with the law. On every one of the 16 indicators, the KP kids did better than the non-KP kids, and the kids whose teachers completed more KP did better than those whose teachers chose to complete less of the instruction.

This was the largest and most carefully conducted longitudinal instructional study ever conducted. The results were duly published in the respected *Reading Research Quarterly* –and ignored.

Fast forward to 2001. When I left SWRL in 1986, I cut bait with all things educational and all things R&D. I knew of either matter only what I read in the newspaper. Since at that time education was entirely a local matter, focusing on human interest stories and high school athletics, I knew practically nothing.

The Chief Instructional Officer at SWRL, Fred Niedermeyer, had been making a decent living doing instructional development on environmental issues, supported by contracts from the utility and waste management industries. I received an invitation to attend his retirement party. I met Ralph at the party and learned of the follow-up study and the fact that he had a copy of the KP program.

In the days following the party conversation with Hanson and Niedermeyer, it dawned on me that while reading instruction had not advanced, Information Technology had advanced to the point that it was now possible to do from a desktop what had formerly required specialized facilities and a staff of a couple hundred people.
(See next page).

So Hanson, Neidermeyer, and I decided to set up 3RsPlus. Having spent our professional lives in the public sector, we knew the constraints of a non-profit corporation if one stayed within strict legal boundaries, so we chose to incorporate as a standard California Corporation.

The business plan was to update the original kindergarten program to reflect interim research, and to market it in CD format on the Internet to parents of preschoolers. Parents could print the program materials on single-side, letter-size paper from their desktop.

Updating the program to reflect interim research didn't require much effort. The program was "off" in only one matter. SWRL linguists had insisted in terming the letter/sound correspondences "beginning" sounds" and "ending sounds." Recent research at the time had shown that the pronunciation of a phoneme outside the context of a word inherently distorted the pronunciation, since pronunciation is contingent on the preceding and following phonemes. The use of "beginning sound (onset) and "ending sound" (rime) minimized the distortion. However, the usage breaks down for multi-syllable words. And English is an Alphabetic -Based language.

Updating the protocol to structure the program in terms of individual grapheme/phonemes actually decreased the number of elements involved in teaching kids how to read texts composed of single-

syllable regularly spelled words. More importantly, it made it possible to greatly simplify the instructional procedure for teaching kids how to handle the complex Alphabetic Code. The instructional procedure for the entire program reduces to a single sentence, “Say the sounds, and read the word.”

The updated program was formatted for distribution on two CDs, and a website was set up to provide information about the instruction and to generate sales. The site was optimized for search engine recognition and was generating several hundred hits daily—but almost no sales. The feedback we got from various probes was that people found the site attractive and the information understandable. So why no sales? To find out we trawled several “preschool moms” web forums.

What we found was that parents love to read to their kid. It’s a bonding experience and enjoyable for both child and parent. And parents are happy to have the computer babysit the kid with any software that even smells of being “educational” for as long as the child is willing to “play.” But when it came to taking any responsibility for teaching the child to read—even when it was a light weight task—few parents wanted to take it on. There were all kinds of rationales for not doing so.

We were dithering re whether to fold up shop or to “try harder” when another unforeseen event occurred. I had stumbled upon a yahoo Forum, rbg3 (Read by Grade 3). The contributors were a motley lot, ranging from excellent to shoddy thinking, typically accompanied by strong emotion. I tried to be careful to avoid mentioning the 3RsPlus program, but it would occasionally enter the dialog. I offered to mail a CD free to anyone interested in looking at it. Among those who did, were twin retired elementary school teachers in Philadelphia who were volunteer tutors. One, Libby Maxim, was surfing for “SWRL” on the Internet and came across a website at Utah State University where a professor was selling a “Reading for All Learners Program (RALP)” derived from the SWRL K-3 Reading Program.”

The professor was not the only person in addition to 3RsPlus to take the SWRL materials out of the public domain and build on them under copyright. Mattel’s very popular and profitable *Reader Rabbit* books and CD’s were the first. Another Venture Corp invested $100,000 in a very unsuccessful media adaptation. The good news about the USU adaptation was that although it added extraneous material to the books, and used dubious instructional procedures, only cosmetic modifications were made to the books per se.

I emailed the professor to get further information. He was very cordial and talked about some “artificial intelligence research” he had done “with people at Stanford.” I emailed that I knew some of the Stanford people and asked who he had worked with. I got a reply from his wife, who was also his “Office Manager” being paid from the RALP slush fund, saying that her husband had recently had a heart attack, and that my emails were aggravating his condition. So I apologized, and that ended the communication.

Then and Now

3/2/00

Then (1966-1986)	Now (2000)
Accountant/Bus. Office	Quicken, TurboTax
Lawyer	Still needed, damn it, but with much reduced scope
Location & Building	It's your work station, stupid
Professional staff	Hire only when you clearly have a need for full time persons and then only as a last resort. Outsourcing much preferred
Secretarial Staff	Microsoft Office
Computer Room	Work Station
Print Shop	Work Station
Artist Studio	Adobe PhotoShop and PageMaker (almost)
A/V Studio	Digital camcorder, editing software, software for direct transfer to website. Same with camera for stills
Publisher	Internet, CD/DVD
Sales and Marketing	From your desktop to the world • Forums/Newsgroups • 3RsPlus website
Board of Directors	We don't need no stinkin Board of Directors. Seek Alliances/Affiliates with individuals and companies offering reciprocal and complementary services and benefits. May be useful to have Board of Professional Advisors, but by and large we will interact with them individually rather than as a group. Face-to-face meetings rare, if ever.
	Cost
Annual budget $4.2 million	You've already sunk the costs for personal use. So you start debt free and you control future costs.

History--Continued

We later learned from a RALP staff person/student that the books had been in the garage of an ex-SWRL staff member. He didn't know the name of the person. He said the SWWRL books no longer existed; he burned them because the prof hadn't paid him the wages he felt he was due. Many copies of the KP books have turned up, but nothing of the advanced instruction. SWRL had the entire set of printing "plates" from Ginn, but these were among the archives that were dumpstered.

Getting back to the history. The other twin set up a yahoo forum with restricted membership dedicated to BRI. I continued to send CD's free of charge. And 3RsPlus undertook the work necessary to strip the extrinsic USU additions, and to clean the books up in book format per the updated architecture. All the SWRL instruction had been constructed per detailed written specifications. The specs were among the documents lost. To "re-engineer" the linguistic structure required much tedious running of word counts and manual analysis. And this work was also performed.

The original program materials that accompanied the set of books were simplified as much as possible, but it was still a load:

- A 16 mm film—for each District
- Two film strips—for each School
- A teacher's manual—for each teacher
- A shoe-box size set of flashcards—for each teacher
- "Big Books"—for each teacher
- A workbook of Practice Exercises and Criterion Exercises –for each student

The 3RsPlus update made it possible to perform all these functions with a single letter-size page card stock containing five flashcards and a Notched Business Card.

One of the yahooer's husband happens to run a print shop. She was willing to set up a sales website and fulfill orders at $20 a set. The best print quote 3RsPlus could obtain was $15 a set. With no overhead and sweat equity, she is able to squeeze out a few dollars on each sale. But the only "market" has been via yahoo-BRI referrals.

BRI was designed and developed to be used with young children who had received no previous reading instruction—Freshkins. The bulk of the yahooers were parents or tutors working with somewhat older children who either had identifiable biological impairment or who had received ineffective instruction in school. In neither case was the diagnosis at all informative, so we coined the term Scuffkin to apply to both those who had been biologically scuffed and those who had been instructionally scuffed.

From 3RsPlus' perspective, the reports by the yahoo'ers of how the instruction was proceeding constituted a series of cumulative N=1 experiments. The instruction proved to be remarkably robust.

Only a very few instances where an instructor reported weeks or months later that "the instruction didn't work" has there been a single instance where the instruction has failed to deliver a Capable Reader. At times, a huge amount of patience and persistence by both child and instructor is required in working with a biologically impaired child. But if a child is able to speak in whole sentences and participate in everyday conversation, the child has the prerequisites to learn to read using the instruction.

Ironically, those who have reported "failure" have been "master teachers." As such, they were unwilling to restrict the instruction to BRI and restrict themselves to the protocol, "Say the sounds, and read the word." They wanted to "teach." In the few instances when their "teaching" went awry they blamed BRI rather than the instructional cocktail they served up.

With the yahooers and distribution in the US in a maintenance mode, the locus for further programmatic R&D happened to shift to the UK. The UK government has adopted a policy of delivering "Synthetic Phonics" reading instruction starting in the equivalent of our Kindergarten and expecting to finish the job by Grade 2.

3RsPlus entered into a joint venture with Piper Books to pursue further R&D. PB is actually one individual, Geraldine Carter. But Geraldine is a very capable person. She cleaned up the design of the Books and changed the spelling and usage from "American" to "English." The joint venture invested in a copier that is able to turn out finished books on demand, so the order fulfillment apparatus in the UK is the same as in the US.

Negotiations are underway for a joint venture in Australia. Principals in India, China, Singapore, and South Africa have expressed interest in similar partnering.

The Brits insist that Spelling be taught along with reading. Using the analyses of the reading instruction (now called 3RsPlus READ), spelling instruction fell nicely into place. 3RsPlus SPELL is coordinated with READ, with the spelling instruction lagging the Reading Instruction. The instructional protocol for SPELL also reduces to a single sentence: "Think the sounds and write the letters." Spelling inherently requires some word-specific memory, but SPELL minimizes that load and makes spelling as meaningful as possible.

The work on WRITE and MEDIA is still in the design stage, because we lack the personnel to move faster at this time. However, each of the components of the COMMUNICATE suite get easier to develop because they build upon the expertise that students acquire in the other components.

READ will reliably deliver Freshkins as Capable Readers and reliably "fix" Scuffkins, but the plots of the books are too "babyish" for older students and adult Scuffsters. What is commonly overlooked is that the older Scuffsters have assets that younger children don't. Their "mental age" has increased simply as a function of being alive; they have better-developed memory and you can "talk to them." That is, they can understand things that can' be communicated to little kids.

By taking advantage of these assets, 3RsPlus has created a new architecture that essentially "skips" the Beginning Reading Instruction of READ, and starts from the get-go with working on how to handle the complexity of the Advanced Alphabetic Code. The architecture is sketched and the text of the first two stories shown in the Attachment at the end of this document.

The architecture has possibilities for appealing to several different interests. "Heck. Speck" is aimed specifically at older boys, but it may have trouble getting past some parents and teachers. Animal/nature stories would be more gender-neutral, sport stories, and R-rated stories for adults are among the possibilities.

The history of programmatic R&D has focused on "reading" because that's where the R&D started, and it's a high professional and societal priority. But the R&D has always had a concurrent eye on the methodology/technology of educational improvement. Several papers documenting various aspects of the methodology can be accessed at http://ssrn.com/author=1199505

The methodology for deploying large-scale initiatives that reliably accomplish specified instructional aspirations has been **illustrated** in the present paper.

The methodology for conducting "natural experiments" that are unobtrusive but that extend accountability to instructional programs and school, district and higher administrative levels has also been described in passing in the present paper. This methodology resolves the matters of "randomized-control experiments," "achievement testing," "portfolios/authentic assessment," and "growth models."

Methodology for defining the substance and structure of school subjects/academic disciplines without getting into the swamp of "standards" is described in the SSRN compilation.

Methodology for addressing the "costs and benefits" of educational services in terms of dollars, calendar time, and transparent benefits is also described in the SSRN compilation. The cumulative capability gives the US a unique competitive advantage in the global economy. But it's just the beginning; it barely scratches the surface of the future potential.

The future of Programmatic Ed R&D lies in the private sector. 3RsPlus expects to continue to provide leadership. But the overall capability of the US private sector needs to be brought to bear to support the Nation's public school endeavor operationally and not just rhetorically.

3RsPlus READ—M Series
The "Heck. Speck! Books"

You can tell by the subtitle that this is not your "usual" instruction. READ-M instruction deals with "struggling readers/learning disabled/dyslexics"-- individuals who are beyond the primary grades and still have problems in reading. Students learning with READ-M can see themselves read successfully from the get-go and continue until they can read any English text with understanding equal to that were they listening to the communication.

The traditional focus on all of the deficits that problem readers *can't do*, overlooks their assets—what they *can do*. Compared to young children, older individuals are more capable in terms of all abilities—intellectual, physical, emotional, and so on. For whatever reasons, these individuals have simply acquired maladaptive ways to go about handling text. These maladaptive patterns have to be extinguished. And while the students are unlearning what they've been doing wrong, they have to be taught to "read right." That is *exactly* what READ-M does. The proof is in the pudding, and the proof is there for all to see.

As with 3RsPlus READ for younger children, the only "instruction" involved is "Say the sounds and read the word." And a Notched Card prevents the student from doing anything but follow the simple protocol. The difference in the READ and the READ-M architectures is that the greater maturity of older individuals makes it possible to essentially "skip BRI" and to start immediately to tackle the complexity of the Advanced Code

There is just one preparatory step before starting READ M instruction. A student has to know or be taught the NATO alphabet, also known as the international radiotelephony spelling alphabet—the one that goes alpha, bravo, Charlie, and so on. Knowing this alphabet is useful in its own right, and for READ-M purposes it provides a mnemonic device for recalling the most frequent grapheme correspondences for each of the 40 some English phonemes. Any student who can accomplish this preparatory step of learning this alphabet has the prerequisites to handle READ-M instruction.

As with READ, READ-M builds on expertise the individual initially acquires to provide experience in handling increasing complex Alphabetic Code, morphemic characteristics, and other linguistic conventions. The substance of the texts is at a post-primary level, with vocabulary that is within the receptive spoken language of older students. When graduating from READ-M, a student will be in position to "read to learn." The student may well lack the technical lexicon and concepts to understand some texts, but these would not be comprehended were the communication spoken. The "I don't understand this" reaction occurs at times for any reader. There *are* vocabulary and concepts that sometimes need to be learned to understand unfamiliar text, but this is not a "*reading* problem;" it's a *subject matter* problem.

There are no "workbooks" or any materials external to the READ-M books involved. Any teacher—or for that matter, any individual who can read—is qualified to conduct READ-M instruction without further training or "professional development." If an instructor should encounter any glitches/obstacles in the instruction with any student(s), veteran READ instructors are more than glad to help troubleshoot the matter via http://groups.yahoo.com/group/Beginning-Reading-Instruction/

READ—M Series
Two stories from Block 1, Book 1

I Am Cat: Playing With A Rat

I'm a black cat who so wants to play
with a big and fat black rat
So I get the rat from a rag bag
and tell him to think I'm his pal.

I wink at my rat, and pat my rat.
And I'm glad when the big black prat
just falls for my tricks
and winks back at me!

Then when the rat's preening
and grinning at me
Wham! Bam! I dash at him!
Slam! Bam! I jump on him!

I let my rat run and he thinks that he's free
He thinks I'm the pal I said that I'd be.
Then I biff him and bash him
and flick him around.

Hmm. Why is my rat not playing with me?
Is he hinting that this is no fun?
Why is my rat so stiff and so still?
His flesh is so cold and so chill…

Oh.
I am a bad, bad cat.
Heck. Speck!
I need my next rat…

Fed up with Trees

RUSS: I'm going to drown in all these trees. I'm fed up – they suck!

JACK: Okay, so you've got stuck in this job – it's not the end of the –

RUSS: Yes it is!

JACK: Fuss, fuss, fuss. You stomp and you frown and you bray like an ass.

RUSS: Stop mocking me!

JACK: If you'll stop shouting at me! You are so loud!

RUSS [Shouting]: Am *not!*

JACK: Cutting down trees is not a bad way to –

RUSS: It is for the trees! And it is for *me!* I'm a town lad – I want to see streets! Not trees and grass and moss and all that *green*! Not ducks and pigs! And I'm so *sick* of sticks and twigs and cutting trunks into logs.

JACK: Well, don't tell the boss. You may get the sack.

RUSS: The sack! You think that's so bad? I'm keen to get the sack! No boss! No fuss! No *trees*! I'll rest in bed all day…No, I'll get drunk all day…No, I'll play the drums in a band all day and do loud gigs! Jobs are for clots!

JACK: You got the guts to go? So go!

RUSS and JACK see the BOSS

BOSS [Frowning]: Okay lads! Less chat! Cut down that tree! Jump to it! Put your backs into it! I want logs!

The BOSS walks off

JACK [to RUSS]: Well…?

RUSS [Blinking]: Well…I may stay. For the day. You can't get this tree down to the ground if I'm napping and playing the drums, can you?

JACK: If you say so. Heck. Speck!

JACK grins. RUSS frowns and thumps his pick at the big brown trunk of the grand tree