

'There Has Been A Conspiracy of Silence About Teaching' Education Week

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B. F. Skinner Argues That Pedagogy Is Key to School Reforms 8/31/83

B. F. Skinner, professor emeritus of psychology at Harvard University.

By Susan Walton

Improving methods of teaching would do more to help public education than would lengthening the school day or any of the other reforms proposed by the National Commission on Excellence in Education and other groups that have recently issued reports on education.

So argues B. F. Skinner, the Harvard University psychologist whose pioneering theories about and studies on the "conditioning" of behavior have had a substantial impact on education. Still a source of controversy 40-odd years after Mr. Skinner began his research, those theories have been instrumental in the development of mastery learning and the "teaching machines" of the 1960's. The behavioral scientist's work has also been an integral part of the debate over individualized instruction.

Mr. Skinner, who at age 79 is Edgar Pierce Professor of Psychology Emeritus, suggests what lessons behavioral science offers for improving pedagogy in a paper that was scheduled for presentation at the 91st annual convention of the American Psychological Association in Anaheim, Calif., last week.

The paper, "The Shame of American Education," echoes the themes that dominate his other writings—*Beyond Freedom and Dignity*, published in 1971, for example, and the utopian novel *Walden Two*, published in 1945. Central to Mr. Skinner's thinking on education are the notions that children should be allowed to learn at their own pace and that teachers should rely on "reinforcers," or rewards, to strengthen patterns of behavior that they want to encourage.

But he argues that current ideas about pedagogy—and about reforming education in general—pay scant attention to these concepts. Moreover, according to Mr. Skinner, the importance of pedagogy is seldom rightfully understood in the educational process.

In placing great emphasis on the need for the teaching of pedagogy, Mr. Skinner contradicts some currently popular ideas. He suggests that the role of education schools should be strengthened and that those critics who advocate replacing pedagogy courses with instruction in the disciplines are misguided.

He further contends that those critics who focus on adding courses and hours to the school day fail to recognize the true cause of the perceived problems in education—ineffective teaching.

The recent report of the excellence commission, Mr. Skinner asserts, "repeatedly mistakes causes for effects." The much-cited "rising tide of mediocrity" is not causing the "erosion," he maintains. "Mediocrity is an effect, not a cause."

"Our educational foundations," he says, "are being eroded by a commitment to laymanship and to theories of human behavior which simply do not lead to effective teaching."

"There has long been a conspiracy of silence about teaching as a skill," Mr. Skinner contends. "Pedagogy is a dirty word."

"I shall demonstrate my faith in a technology of teaching by going out on a limb," he states. "I claim that the school system of any large American city could be so rede-

signed, at little or no additional cost, that students would come to school and apply themselves to their work with a minimum of coercion, and, with very rare exceptions, learn to read with reasonable ease, express themselves well in speech and writing, and solve a fair range of mathematical problems." *(Like rats + pigeons?)*

The way to accomplish this, Mr. Skinner argues, is to develop a "technology of teaching" that focuses on programmed instruction. Although such a technology has the capacity to revolutionize education, he asserts, educators continue to resist using it.

Mr. Skinner argues that computers, as they are most commonly used, are essentially sophisticated versions of the "teaching machines" of the 1960's. Those machines, and the method of programmed instruction that they employed, are seldom used in elementary and secondary education today—perhaps in part because of the "rank commercialism" that "quickly engulfed the field of teaching machines," Mr. Skinner writes.

"Too many people rushed in to write bad programs and make promises that could not be kept," he adds. "But that should not have concealed the value of programmed instruction for so many years."

In addition, he argues, the ideas on which programmed instruction is based are in conflict with "deeply entrenched views of human behavior." Suggesting that educators see a reliance on programmed instruction as requiring an unacceptably mechanistic view of human behavior, Mr. Skinner lays much of the blame for this state of affairs on "cognitive psychology." That school of thought, he says, pays insufficient attention to the pedagogical techniques that behavioral research suggests are effective.

"Psychological theories come into the hands of teachers through schools of education and teachers' colleges, and it is there, I think, that we must lay the blame for what is happening in American education."

Pointing to recent articles and reports on how to improve education, Mr. Skinner argues that one central fallacy is that it is more important for teachers to know their subject matter than to know how to teach it.

Although there are naturally talented teachers, and able students who would learn regardless of who taught them, these are exceptional cases, in Mr. Skinner's view. It is, he writes, a "disastrous mistake to take it as a model to be followed in our schools, where hundreds of thousands of teachers must teach millions of students."

"Teachers must learn how to teach, and they must be taught by schools of education and teachers colleges in more effective ways."

Mr. Skinner offers four suggestions on how teaching could be improved. "Be clear about what needs to be taught," he recommends. Too often, he argues, teachers confuse the overall goal—learning "spelling," for example—with learning how to spell specific words. Although granting that students do build on previous understanding, he argues that "intuition" of this sort cannot be taught directly. "nor has any student

reached that stage without first learning to do the things it seems to replace."

Second, Mr. Skinner advises, "Teach first things first." Teachers of mathematics, for example, cannot begin with the thought that they want their students to be able to "follow a logical line of reasoning."

"Among the ultimate but useless goals of education is 'excellence,'" he writes. "Another useless ultimate goal is creativity. Eventually, some students behave in creative ways, but they must have something to be creative with and that must be taught first."

Referring again to programmed instruction, Mr. Skinner also advises that educators "stop making all students advance at essentially the same rate."

The phalanx, he writes, "was a great military invention, but it has long been out of date. It should be out of date in American schools, where students are expected to move from kindergarten through high school in 12 years." *no more Carnegie units*

As a result of this system, those students who could proceed faster are held back, and those who cannot keep up fall behind, he says. And, he adds, "We could double the efficiency of education with one change alone—by letting each student move at his or her own pace."

"No teacher can teach a class of 30 or 40 students and allow each to progress at an optimal speed. Tracking is too feeble a remedy. We must turn to instruments for a large part of the school curriculum."

The psychologist also urges educators to "program" subject matter. "The heart of the teaching machine, call it what you will, is the programming of instruction—an advance not mentioned in any of the reports I have cited," he writes.

He argues that "the reinforcing consequences of being right" will eventually prompt students to do what they are supposed to do. But to elicit the behavior the first time, their behavior must be "primed" and "prompted." *Very important*

"An instructional program is a prime example of putting first things first," he writes. "Working through a program is really a process of discovery, but not in the sense in which that word is currently used in education."

Although under ideal circumstances, it might be best to allow students to discover on their own time, it is not realistic given the limited time available for education. Mr. Skinner states.

"Trying to teach mathematics or science as if the students themselves were discovering things for the first time in history is not an efficient way of teaching the basic skills, with which in the long run, with luck, a student may indeed actually make a genuine discovery."

Programmed instruction, Mr. Skinner contends, makes "very few demands" on teachers. And the successful learning that would follow the use of programmed instruction, he argues, would also serve to enhance the status of teachers.

"There is a better way: Give students and teachers better reasons for learning and teaching. . . . [The behavioral sciences] can develop instructional practices so effective and so attractive in other ways that no one—student, teacher, or administrator—will need to be coerced into using them."

Mastery Learning OBE Teaching Machine

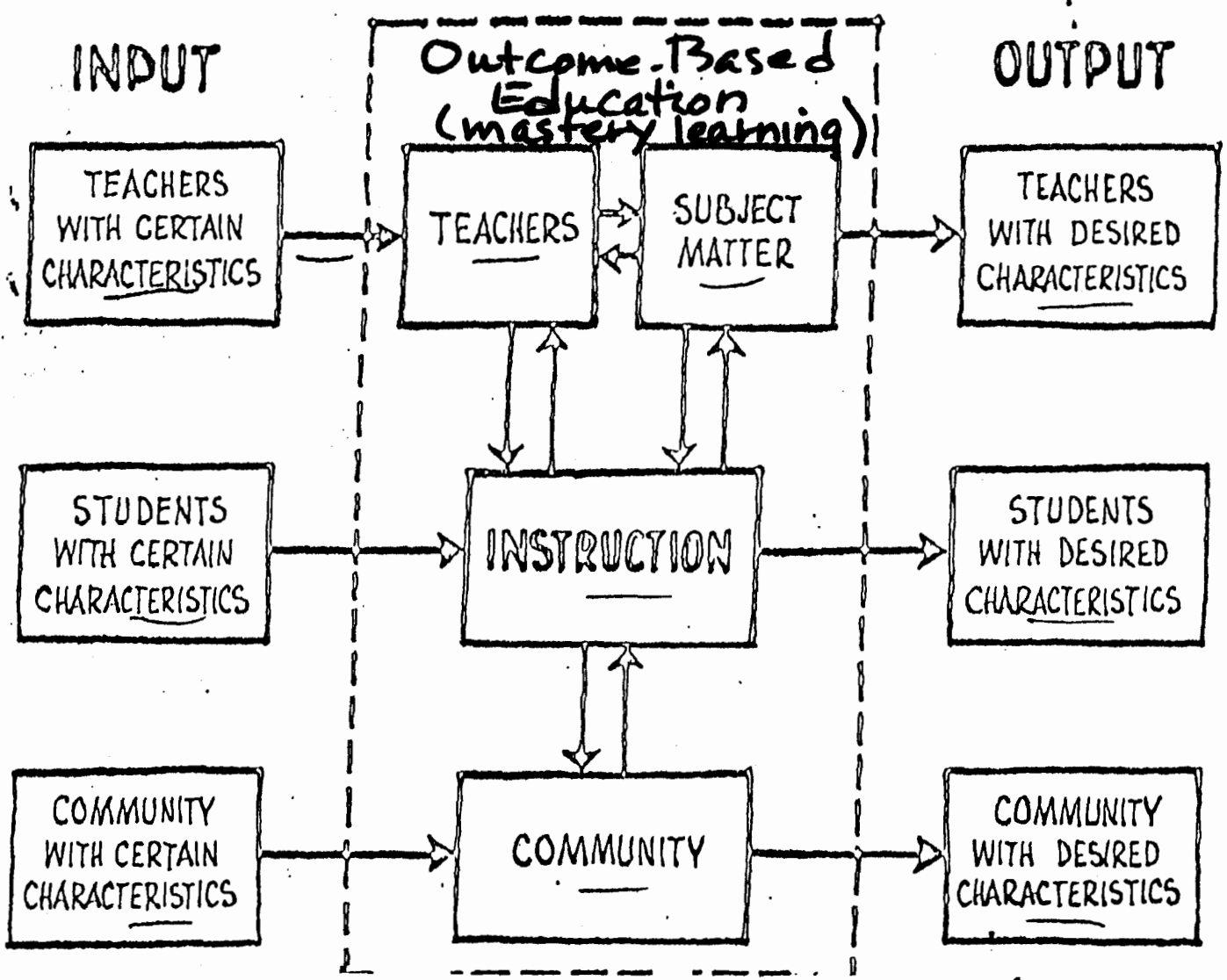
Sizer: "Less is More"

Key words

Learning and Instruction in Chicago Inner City Schools
 June 1968 Position Paper Planning Staff Chicago
 by Dr. Donald Lye, Wm. Farouhar, Lee Shulman
 Chicago and Michigan State University collaboration.

SCHOOL ORGANIZATION

1968



FLOW CHART OF EDUCATIONAL PROCESS & NEEDS

THIS PAGE TAKEN FROM 52 PAGE POSITION PAPER (DRAFT COPY, FOR REVIEW AND/OR REVISION) ENTITLED "LEARNING AND INSTRUCTION IN CHICAGO INNER-CITY SCHOOLS" PREPARED FOR THE PLANNING STAFF OF THE CHICAGO PUBLIC SCHOOLS AT THE REQUEST OF DR. DONALD J. LEU: BY WILLIAM W. FAROUHAR AND LEE S. SHULMAN, MICHIGAN STATE UNIVERSITY AND CHICAGO PUBLIC SCHOOLS COMMITTEE: EVELYN CARLSON, ASSOC. SUPERINTENDENT, LAURA WARD, CHAIRMAN, SOPHIE BLOOM, ANGELINE CARUSO, MAC NAIR GRANT, MARJORIE LERNER, JUNE, 1968. (This program resulted in almost 1/2 of 39,500 students in 1980 freshman class failing to graduate!)

THE PROJECT WAS KNOWN AS A CONTINUOUS DEVELOPMENT-MASTERY LEARNING PROJECT AND COVERED NOT ONLY ACADEMIC, BUT AFFECTIVE (SOCIAL AND VALUES EDUCATION) USING COMMUNITY AS A RESOURCE, SCHOOL-BASED MANAGEMENT, COMMUNITY SERVICE, AND NON-GRADING. THE LAST PARAGRAPH OF THE PAPER READS: "The future of Chicago rests upon the ability of its schools to fuse the needs of today with the demands of tomorrow. We will be successful in confronting this challenge if we can effectively develop a coordinated program within which pupils, instructional personnel, members of the community, and institutions of higher education work jointly for the achievement of intellectual mastery, the development of social responsibility and the reconstruction of the life of the city." (This is 1990's Education Restructuring Movement.)

References used in paper are Benjamin S. Bloom, John Carroll, Robert Gagne, Robert Glaser, & Henry Chauncey (Soviet Preschool Ed) among others.

SENATE ON FEB. 8 GAVE \$25 MILLION OVER THREE YRS. TO CARNEGIE PLAN (PRIVATE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS). REPRODUCE THIS FLYER, DISTRIBUTE WIDELY. CONTACT CONGRESSMEN TO REQUEST THEY VOTE NO ON HOUSE COMPANION BILL, REQUESTING INVESTIGATION OF SHULMAN AND ENTIRE TEACHER CERTIFICATION PROGRAM WHICH WILL REMOVE LAST VESTIGE LOCAL CONTROL FROM EDUCATION AND WHICH, DUE TO CO-MINGLING OF PRIVATE AND TAX FUNDING, WILL ELIMINATE CONSTITUTIONALLY-REQUIRED ACCOUNTABILITY TO TAXPAYERS.

Ed. WK 2, 4/90
 An educator and the Organization for American-Soviet Exchanges are seeking recruits for an early-childhood-education study tour of the Soviet Union. The May 14-27 tour could offer insights to educators interested in designing programs that recognize cultural diversity and foster a "spirit of cooperation," said Nancy Lauter-Klatell, an associate professor of early-childhood education at Wheelock College, who is organizing the trip. More information is available from Ms. Lauter-Klatell at Wheelock College, 200 The Riverway, Boston, Mass. 02215. 4176

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