

WILL BUSINESS TRAINING IDEAS WORK IN SCHOOL?

HARVEY J. BRUDNER*

Courses developed by Westinghouse Learning Corporation have been tested in regular school settings with impressive results in learning and cost-effectiveness.

EACH YEAR, about 5,000 senior management personnel of the Westinghouse Electric Corporation come in groups of about 20 to 40 to attend courses presented by the Training & Development Division of the Westinghouse Learning Corporation. The courses, on the average, involve about 20 contact hours, and therefore, on a Carnegie-unit basis, are roughly equivalent to a one credit college level course. The preparation budget for a course may be as high as \$80,000!

Over two man-years of effort could be involved to produce a single course. Many utilize a multimedia presentation via the PLAN* (Program for Learning in Accordance with Needs)¹ approach. Some use a dozen videotapes involving professional actors and specially designed sets. Other course elements involve live computer simulation sessions, several sound-slide presenta-

tions, programmed instruction, and many "use-and-do" and "hands-on" type presentations. There is always considerable opportunity for feedback and interaction sessions. Not all the personnel taking the course may take the same course element at the same time.

Although there is a high cost associated with the initial production, once created, content can be reproduced for presentations in Pittsburgh, or other U.S. locations, or be sent to South American facilities, or presented in Europe or Asia. Because courses are produced on a modular basis, feedback allows for appropriate revision and improvement without altering already highly effective portions. The uniformity of the final presentations guarantees an "equality of educational opportunity" for all of the personnel who eventually take such courses. Can such business training ideas be made to work in the classroom? More and more of us think they can, they must, and they will!

Some major differences between the Westinghouse Learning Corporation PLAN* approach, and the present conventional classrooms are listed in Table 1.

¹ Harvey J. Brudner. "Computer-Managed Instruction." *Science* 162: 970-76; November 29, 1968.

* Harvey J. Brudner, President, Westinghouse Learning Corporation, New York

Application to the Classroom

Is the Westinghouse PLAN* really workable in the classroom? It not only is

WLC's PLAN*	Conventional Classroom
Individualized instruction (in content, pace, and style)	Lockstep group
Use of multimedia	Captive audience lecture
Frequent student feedback and measurement	Little student participation
Computerized information storage and retrieval	A few records kept by hand
Content carefully determined by developing objectives	General treatment of a topic that differs depending on the teacher
Built-in motivation ideas for student and teacher	Degree of motivation depends on teacher performance
Rearrangements of small units can lead to a different program of studies for each student to suit his or her needs	All students treated as if they are the "average student"
Major emphasis on future utilization potential	Little attention paid to "career education"
More cost-effective with greater numbers of students	Less cost-effective with greater utilization
Allows for validation of learning materials based on student benefit measurements	Learning materials at teacher's discretion
Teacher is a learning consultant and tutor	Teacher acts mainly as a content presenter

Table 1. Differences between the PLAN* approach and that of the regular classroom.

potentially usable, it has been researched and developed and it is growing in use. At the present time, 55,000 students in 24 states are learning via the full PLAN* system and an additional 45,000 are utilizing one or more PLAN* Individualized Courses on a part-time basis.

The business training approach has proven to be highly effective in the classroom. The PLAN* system was researched and developed over a five year period that started in 1967. Over \$10,000,000 was spent in order to develop all of the behavioral objectives and test items, computer information programs to help the teacher, guides to the best learning materials available in each area of curriculum including reading or language arts, social science, mathematics, and science. Also developed were administrator and teacher training units, and techniques for increasing the cost-effectiveness of the system.

CONSUMER RIGHTS AND PROTECTION

OBJECTIVE: LIST THE RIGHTS AND RESPONSIBILITIES OF THE CONSUMER EXPLAINING THE IMPORTANCE OF PROTECTING THOSE RIGHTS AND ACCEPTING THOSE RESPONSIBILITIES.

Example: True or False: When you buy something on trial, you may return it within a reasonable time and get a full refund.

KEY WORDS: title, on approval, merchandise, goods, fraud, deception, guarantee, warranty

LEARNING ACTIVITIES

(a) Most businesses follow honest sales practices. Some products, however, do not live up to the manufacturer's claims, and a few businesses are not always honest with their customers. You should be aware of your rights as a buyer and know what you are entitled to expect when you make a purchase. After studying several resources, list your rights and describe each.

(b) As a buyer, you are responsible for what you buy. When dissatisfaction occurs because of faulty merchandise or misleading advertising you should first talk with the merchant who sold you the item. If you are still dissatisfied, seek other help. Using your local telephone book write the names, addresses, and telephone numbers of places you might go if your rights have been violated. Check your list with another student working on this QU.

(c) View an audio visual aid and/or read a resource on false claims and practices. Make a list of ways dishonest business people may try to deceive you. What is the difference between deception and fraud?



OPTIONAL RESOURCES

(d) You And The Law. Filmstrip (Guidance Associates)

(d) Your Right To A Hearing. Film (Film Fair Communications)

(d) See You In Court. Filmstrip (Coronet Instructional Media)

(d) Getting A Lawyer. Filmstrip (Grollier)

(d) The Rights Of An Arrested Person. Modern Consumer Education (Grollier)

(d) Consumer Be Warned: Frauds And Deceptions. Filmstrip (Current Affairs Films)

Buyer Beware Series: Consumer Rights, Consumer Responsibilities, Filmstrips (Westinghouse Learning Corporation)



The above photo is from the Buyer Beware Series of filmstrips used as optional resources to accompany a PLAN* "Teaching-Learning Unit" (left).

A number of studies^{2,3} conducted by independent research agencies have shown that PLAN* students make greater gains than control students in both cognitive and affective domains. For example, during the 1973-74 school year, Robert Aaron of the University of Georgia conducted a full-scale evaluation of PLAN*. He did his work at the Youth Development Center in Milledgeville, Georgia, a correctional institution for adolescent boys from all over the state. Dr. Aaron compared 125 boys using PLAN* with approximately 250 boys receiving more traditional instruction.

Before PLAN* was put into operation, all boys in the Youth Development Center were extensively pretested for reading and math skills, IQ, and mental age. There was no significant difference between the PLAN* and the control groups. Every boy had an equal chance for improving at the beginning of the experiment.

The end result was a different story.

²National School Public Relations Association. *Individualization in Schools*. Washington, D.C.: NSPRA, 1971.

³Educational Products Information Exchange Institute. *Evaluating Instructional Systems*. Report #58. New York: EPIE, 1974.



In this classroom, children are working on PLAN* in groups and on their own, moving ahead at their own pace.

A random sample of boys who used PLAN* showed gains in reading of 8 months to a year greater than the students in traditional classrooms. And in math, the PLAN* group mean gains were from 3 to 5 months greater. As Dr. Aaron put it: "Based on this preliminary study, the computer managed, individualized learning program has had a very dramatic effect on the achievement behaviors of the experimental pupils."

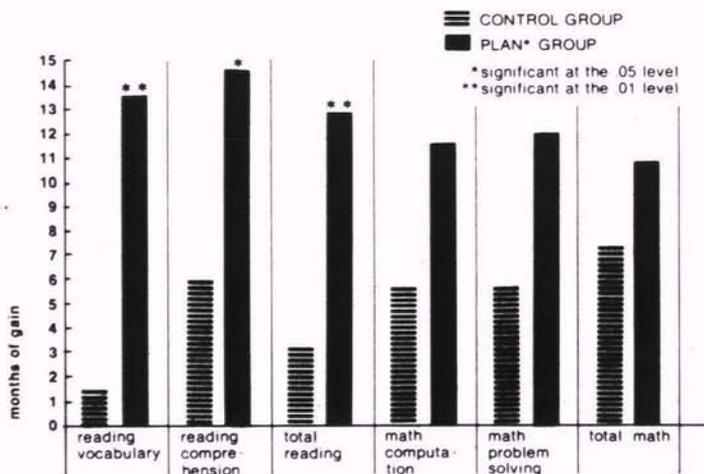


Table 2. Growth in reading and math skills. (Youth Development Center, Milledgeville, Georgia)

Table 2 tells the story even more clearly.

Just as dramatic has been the evidence that PLAN* helps children feel better about themselves and their experience in school. Marvin Powell, Professor of Educational Psychology at Northern Illinois University, tested more than 2,500 PLAN* and control students at levels 1-6 for the effect of school on each child's feelings of self-confidence. PLAN* students (in their first year in the program) started the year with measurably less confidence in their own abilities than students at control schools. Yet after one year in PLAN*, students at every grade level showed a greater growth in self-esteem than control students. The increase in self-esteem among students at the PLAN* school was statistically significant at four out of the six grade levels tested.

Favorable Cost-Effectiveness

This kind of hard data bears out the observation by most PLAN* teachers, who have believed that PLAN* gives students a better self-concept, a more positive view of their teachers, and better relationships with their fellow students.

Elda Wilson of Bradley University sampled the attitudes of 234 first-year PLAN* teachers all over the country and got an overwhelmingly positive response. Seventy-nine percent of those responding felt that "students have a better learning experience in PLAN* than they had previously" and 73 percent agreed that "students in PLAN* develop a better self-concept." In addition, 85 percent stated that "PLAN* should be continued in my school next year."

The need for increasing the cost-effectiveness of our educational system has been described in *The Productive Society* by Patrick E. Haggerty.⁴ Over the past several decades, we have witnessed increasing educational expenditures often with little observable change in educational output. The

exciting aspect of the newly emerging total educational systems, such as PLAN*, is that they seem to allow for greater cost-effectiveness in addition to better education as their utilization increases.

An issue of *Dædalus*, the journal of the American Academy of Arts and Sciences, contains an in-depth review of "Education in Private Industry" by Lewis M. Branscomb and Paul C. Gilmore.⁵ These writers review training in companies such as IBM, Xerox, and AT&T, and the distinction between training and education as developed in dialogues between the Sophist-Toffler or the Socratic-McClintock schools of thought. Obviously, there are strong arguments on both sides. However, during this decade of difficult economic, social, political, and technical problems, the demands on our American educational system will also be increasing. Innovative alternatives to the present organization that can be more closely geared to career education concepts and yet that preserve our ability to have the student develop critical analytic thinking capabilities are needed.

Two of the basic goals of our educational system are to preserve and pass on our cultural content and values, and to provide for problem solving. Alternative systems must provide the students with capabilities, skills, and relevant information to allow for accomplishing these two basic goals.

Over the past 25 years, the development of business training methodologies has produced a framework which now allows for a major integration of our developments in science and technology with all areas of education. Communications, behavioral engineering theory, and computerized information storage and retrieval systems can be expected to play a major role in transforming the educational process. They will give the teachers of tomorrow sophisticated aids to allow for flexible, multimedia, individualized education. Thus the quality of education, along with its cost-effectiveness, will improve. □

⁴ Patrick E. Haggerty. *The Productive Society*. New York: Columbia University Press, 1974. pp. 107-20.

⁵ Lewis M. Branscomb and Paul C. Gilmore. "Education in Private Industry." *Dædalus* 2: 222-23; Winter 1975.

Copyright © 1975 by the Association for Supervision and Curriculum Development. All rights reserved.