

**Walden "U":
First Report of a Behaviorally-Based College**

Bruce A. Thyer
*Department of Psychology
Walden College*

ABSTRACT: This paper will describe the development and operation of Walden College, an institution of higher learning located in northeast Georgia and based on the principles of applied behavior analysis and contemporary developments in programmed and computer-assisted-instruction (CAI). Walden College (nicknamed Walden "U") was founded in 1986 by a group of behavior analysts and was made possible through a generous endowment provided by an anonymous benefactor. With an enrollment of approximately 700 undergraduate students and a faculty of 53, Walden U is a four year private liberal arts college accredited by the Southern Association of Colleges and Universities.

"If worse comes to worst, we shall organize as a college..."

B. F. Skinner, 1948 *Walden II*, p. 111

For over three decades the shortcomings of conventional educational practices in the United States have been well known. In elementary, middle, and higher education, students spend too little time engaged in what is called studying. In most schools, teaching methods have not advanced beyond the lecture, drill, and testing approach that has been used for over 2000 years. Students are grouped into classes and proceed at a rate dictated either by the teacher, who doles out assignments, or by the slower students in the program. Students are typically tested for the mastery of course content *en mass*, and the threat of poor grades is used as the primary motivator of student learning. Most grades, both good and bad, are delivered days, weeks, or months following a given student's effort at studying and, as a consequence, have little meaning to the learner, or positive effect at promoting understanding or mastery of new content. Through the use of infrequent examinations, typically given at mid-term and at the end of the semester, teachers inadvertently promote cramming behavior, short periods of intense study immediately before such tests, which yields short-term learning at best. Inadequately prepared students, or those otherwise unable to keep up, are forced to drop out or receive a bad grade, a grade which will remain on their record

Author's Notes:

Paper presented at the annual meeting of the Association for Behavior Analysis, San Francisco, CA, May, 1992. Preparation of this manuscript was made possible by the faculty, staff and students of Walden College. Correspondence may be addressed to: B. A. Thyer, 260 Snapfinger Drive, Athens, Georgia 30605.

THYER

regardless of subsequent mastery of course content in succeeding terms or through independent study.

In effect, students are not exposed to interesting reading materials presented in a stimulating manner, experience the effects of studying, learning and mastery that are long deferred or rely too often upon aversive control rather than reinforcement, and are unequally prepared when beginning a class. No accommodation is made for experiencing life circumstances that may prohibit the timely completion of assignments. The consequences of these ineffective educational practices are predictable: students become apathetic, learn poorly or not at all, have high rates of absenteeism and of completely dropping out of school, and are often ill-prepared to embark upon a rewarding career as a productive member of society.

It is easy to recite the litany of educational woes afflicting the United States. They are known to all of us in the educational establishment. Less well known have been some solutions, based in part upon an alternative approach to teaching and learning derived from the conceptual foundations called behavior analysis, originated by B. F. Skinner and others too numerous to mention.

THE FOUNDATION OF WALDEN "U"

In 1985 a wealthy industrialist passed away and donated a large sum of money for the advancement of behavior analysis within higher education. Legal stipulations prohibit me from revealing who this donor was, the exact amount of the endowment, or other details of the bequest. I can state that the donor was a Harvard undergraduate in the early 1950's, had taken several courses in science and human behavior, and had participated in some early studies in programmed instruction as a student. These experiences left a significant favorable impression on him, and throughout his life he remained perplexed at the lack of alacrity with which higher education adopted these methods. He knew that they were highly effective educational methods, he had learned from them personally while in college, and had made extensive use of programmed instruction in the training of his workers throughout the large corporation that he headed.

The donor's stated intention was clear: A foundation was endowed dedicated to the promulgation of behavior analysis within higher education. This organization is called the Foundation for Behavior Analysis in Education, and is composed of a small group of behavior analysts, many of whom are members of the Association for Behavior Analysis, who serve as unpaid consultants and stewards of the Foundation's assets. The members of the Foundation met for over a year, discussing various ways to make the most effective use of the endowment. Several options were considered: the establishment of annual awards for the best examples of behavior analytic research in higher education; the behavioral equivalent to the MacArthur Awards, providing five years of salary and research funds to promising, behaviorally-oriented educators, with no strings attached; promoting small scale

WALDEN "U"

demonstration projects at a number of universities across the country, and so forth.

The actual course of action that was ultimately decided upon was unique in scope and in the history of behavior analysis: to establish a completely behavioral college based upon the principles of applied behavior analysis and programmed instruction, incorporating the latest advances in educational technology and computer-assisted instruction, and to offer the complete range of undergraduate majors typically found at four-year private liberal arts colleges.

After a range of options was explored, the members of the Foundation decided to purchase a bankrupt four-year college located in northeast Georgia in the foothills of the Appalachian Mountains. This church-affiliated school had experienced declining enrollments for years and was a serious financial liability to the denomination that sponsored it. Indeed, the denomination was grateful that the Foundation offered to purchase the property so that they could close the college and offer to transfer students to their affiliated school in southern Georgia.

The Foundation acquired, in one fell swoop, an entire campus and physical plant, classrooms, library, dormitories, administrative space and faculty offices. Architects were called in to make extensive renovations and remodeling. Large classrooms were divided into smaller computer labs, the necessary wiring was installed to permit computer, videotape and videodisc hookups in every classroom and faculty office. While these physical renovations were being completed, a Board of Trustees was established, separate and independent from the Foundation, to appoint a college president and oversee the operation of the school. It was decided to name the school *Walden College*, but it has, perhaps inevitably, come to be called Walden "U" by our faculty and student body, a play on both Thoreau's "Walden" and Skinner's "Walden II".

In 1987, faculty and administrative recruitment began, carefully and selectively, seeking to hire from among that small body of academics who were master teachers of their respective disciplines, familiar with (or willing to learn) the intricacies of computer-assisted instruction, and enthusiastic about embarking on this radical educational experiment. Faculty positions for the departments of psychology and of education were of course easiest to fill, followed by instructors in social sciences, mathematics, the physical and biological sciences, language arts, and humanities.

I was one of the earlier faculty hired, to chair the Department of Psychology, which consists of five full-time doctoral-level faculty and is one of the stronger departments, for obvious reasons. As new faculty, we became familiar with the various CAI authoring systems that were commercially available, and agreed upon a common one that was quite user-friendly. We reviewed existing educational software, and when apparently suitable materials were available, we pilot-tested them on other campuses (thanks to cooperative colleagues). Gradually we as a faculty were able to select appropriately demanding commercial software for a number of courses.

THYER

For those courses in the curriculum for which no commercial products were available, faculty experts in various subjects jointly worked with our Walden U CAI specialists to develop programs based on leading and respected textbooks for various subjects. For example, although a large number of small, biologically-related programs are available (e.g., individual ones covering brain anatomy, the classification of plants, etc.), there were no commercial programs that covered content equivalent to a semester-long Biology I course. These our faculty had to develop from the ground up. For other subjects, we had ample choices. For example, the Defense Language Institute of the U.S. Army in Monterey, California very graciously donated entire CAI-based and interactive laser videodisc programs for the learning of over 12 languages, including French, German, Japanese, Spanish, Arabic, Russian, and Chinese (both Cantonese and Mandarin). These were software programs that have been in existence for years and are used to train military linguists. Our Japanese language arts program is particularly strong, thanks to a substantial grant provided by the Katsudon Corporation, and a faculty exchange program with Inu University. Similarly, we initially found suitable programs covering college algebra, geometry, trigonometry, and calculus, English grammar, chemistry, physics, some history, and several other core courses. These were piloted, adopted, repeatedly tested and refined, or dropped. We offer the usual range of coursework and majors associated with traditional liberal arts colleges.

HOW "CLASSES" ARE ORGANIZED AT WALDEN U

There are virtually no lectures at Walden U. Instead, students register for various courses conducted via CIA and proceed at their own pace. A typical courseload consists of four courses each earning 3 hours of credit. The workload is adjusted so that the average student spending six hours per day Monday through Thursday will make timely progress in his/her studies. Once a week students meet in small groups with the professor assigned to each "course." The professor reviews the individual's progress, conducts mini-tutorials, and deals with any problems that may arise. All courses are supported through the college's mainframe computer, and professors are free to monitor individual student progress each day, if necessary. The courses are structured so that mastery of one lesson plan must be demonstrated prior to proceeding to subsequent material. Adequate supplemental examples are built into each program to allow for sufficient review and exercises without repetition of old material. Past work is kept on record and students are free to stop working on a particular course at any time, and to pick it up when their schedule permits. Weekly printouts of student efforts (time devoted to each course, performance on quizzes, etc.) permit faculty advisors to become aware of academic difficulties early on.

WALDEN "U"

INITIAL RESULTS AT WALDEN U

Because of our generous endowment, students are admitted to Walden U without regard to ability to pay. Our tuition is relatively low, comparable to that of the larger state universities in the southeast. Although we are able to be relatively selective in choosing our students, our commitment both to social justice and to educational experimentation has resulted in an institutional policy to have at least 15 percent of the student body be composed of academically marginal students, individuals who typically come from the lower end of the socioeconomic scale. We also have a strong affirmative action program with respect to both student and faculty recruitment.

Upon admission, all students receive comprehensive multiple-choice (administered via computer, of course) and essay examinations in various areas of the core curriculum, and their initial selection of coursework is based in part upon their performance on these standardized tests. For example, students with an extensive high school background in mathematics skip the first year college algebra class and immediately enroll in advanced classes. We do not have a developmental studies program, wherein academically marginal students undertake high-school level courses preparatory to enrollment in a regular program of study. The CAI aspect of our curriculum obviates the need for developmental studies.

Our advisors authorize the student to enroll in up to four "courses" at a time and schedule the new student for an orientation meeting at one of our extensive computer laboratories. Students unfamiliar with computers (an increasingly rare occurrence) are initially enrolled in several fundamental courses, such as typing, a DOS tutorial, and WordPerfect, all taught via CAI. Generally within two weeks students have become facile at signing on to a personal computer, typing with some dexterity, and in using a wordprocessing program. Students can choose from a variety of wordprocessing programs, but we require all students to learn both WordPerfect and Microsoft Word wordprocessing programs, as these are the systems they are most likely to encounter elsewhere. They also are required to develop expertise on DOS-based personal computers and with MacIntosh systems, for similar reasons.

At the orientation students are taught to sign on, how to use a menu to select the authorized course they wish to work on, and are placed where they left off in the CAI program (with the option of reviewing old material). The vast majority of our CAI coursework consists of interactive tutorial instruction with small amounts of new information being frequently presented both on the monitor and audibly, the student being required to provide some response indicating comprehension prior to moving on to new material, with immediate feedback and the use of the principles of successive approximations built into our instructional materials. Each course has separate drill and practice programs for students needing such experiences. We learned very quickly that 'present and test' programs alone are neither user-

THYER

friendly nor productive of good learning, nor are non-interactive 'simulation' programs.

We structure our CAI courses so that it takes the average student approximately 175 hours to complete each one. He or she may work as diligently or as slowly as their life circumstances permit. Students have individual monthly scheduled meetings with their academic advisor who obtains a printout of the student's daily progress in each course, indicating hours spent signed on, number of lessons completed, percent responses correct, and whether the student is making timely progress.

It is virtually impossible to fail a course at Walden U. At worse, the student stops working on a given class for a time and picks it up again, with suitable review, when circumstances permit. Students are not permitted to proceed to advanced coursework until foundation content is successfully completed. When a given course is completed, the student receives a grade of "A." After their first semester of work is completed, all Walden U students are on the Dean's List, and all graduate *summa cum laude*! Tuition is based upon a student's enrollment in each course. We are experimenting with offering students a modest tuition rebate in return for completing a given course ahead of schedule or if they make fewer than a certain percentage of errors while completing a CAI program.

Each time the student completes the equivalent of a year's worth of coursework, he or she takes comprehensive examinations in the fields of study they have just finished. The results of these examinations have no bearing on the student's grade or progress through the curriculum; rather, they are one of our quality assurance mechanisms to ascertain whether or not our students are demonstrating learning comparable to that obtained by students in conventional liberal arts colleges. It was only by empirically documenting the effectiveness of our instructional methods that we were able obtain accreditation by the Southern Association of Colleges and Universities.

COLLEGE LIFE AT WALDEN U

The large majority of our students live in dormitories, as we are a residential college. Some stagger awake by noon, others are up at 5:00 a.m. when the computer labs open. The sleepy ones were likely up until 1:00 a.m., when the labs close. No one has an 8:00 a.m. class at Walden U, a feature that both our faculty and students consider the most significant advance in American higher education in the 20th century!

Apart from the weekly two hour Faculty lead seminar associated with each CAI course the student is enrolled in, and the monthly meeting with one's academic advisor, student life at Walden U is relatively unstructured, at least in terms of obvious external scheduling arrangements. In reality, the vast majority of our students are exceedingly diligent in their studies, a feature one would expect from

WALDEN "U"

a curriculum largely based on CAL. Another obligation is that each student is required to provide four hours of labor per week to the college, labor in the form of light maintenance, grounds-keeping, supervising youngsters in our college day care center (open to all faculty, staff and students with children, without charge), serving as research assistants, library aides and computer lab monitors. All told, with our student body of 700 putting in four hours per week, the college enjoys the equivalent labor force of 70 full time employees per week. Vandalism, littering, theft, or graffiti are virtually unknown at Walden U: If something is damaged, it is one of the students who will end up repairing, scrubbing or picking it up.

As a part of our affirmative action program for economically deprived students, we offer free tuition and housing to financially needy students in return for a total of 15 hours of labor a week, performing tasks similar to those completed by all Walden U students. Obviously there is no stigma attached to this assistance program, and because all students participate in providing some labor, those receiving the financial aid are indistinguishable from those who do not.

Walden U does not participate in intercollegiate athletics, but we do have an active intramural sports program, with co-ed softball, volleyball, and tag football. These programs are organized and run by the students themselves. Within a short drive of our campus one can hike in the beautiful north Georgia mountains, climb rocks, raft rivers or go hang gliding. Atlanta and its dubious attractions are about 90 minutes away, so obviously our students do not lack for recreational activities.

Our students can readily leave campus for a few days to a few weeks at a time without fear of falling behind in their coursework. Indeed, the course program will patiently wait until the student returns, with no penalty or make-up work to perform. Our campus operates virtually year round. There is no lengthy summer break to allow the students to return home and harvest the crops, and the winter vacation of two weeks is demanded by our faculty and staff, not the student body.

Students are permitted to enroll at any time during the year at Walden U. We do have two "graduation" ceremonies per year, with all the pomp and circumstance one could wish for, but these are not associated with the termination of any particular semester or "class" of graduates. As a consequence there is a constant stream of newly arriving students as well as graduating students. By carefully monitoring facility use throughout the year, we are able to increase admissions during periods of relatively slack activity (e.g., during August) to even things out, and to decrease them when our facilities get a bit overloaded. A short notice distributed to the student body stating that now would be a good time to visit the family is usually sufficient to get the necessary five percent or so to take a break for a week.

THYER

PLANS FOR THE FUTURE OF WALDEN U

An increasing number of students are bringing their own personal computers with them to campus, and making arrangements to sign on to the Walden U network of CAI programming while remaining in their dormitories. This in effect frees them from the tyranny of having to wait for a PC to become free in one of the computer labs, and enables them to work all night long if they so choose. Inevitably, this has given rise to requests that they be allowed to complete their coursework while remaining at home — creating what we believe is the first electronic university. Our preliminary studies along these lines show promise and we anticipate a considerable increase in our enrollment of such "off-campus" students. We will pursue this only as long as our data indicate that campus-based and home-based instruction yield equivalent results.

Our graduates have done quite well on the Graduate Record Examination, Law School Admission Test and similar examinations, and approximately one-half have gone on to graduate school, a somewhat higher proportion than is usual for liberal arts graduates. In part, this is because the students are several years younger when they graduate, and the modest Walden U tuition engenders less debt. Also, we feel that they are better prepared for the rigors of graduate school because of the strong repertoire of study skills they have acquired during their tenure at Walden U.

Both our faculty and alumni are clamoring to develop masters degrees and eventually doctorates at Walden U. Our first step in this direction consists of offering a Masters degree in behavior analysis, beginning in the fall of 1993, through our Department of Psychology. There is some sentiment to change our name from psychology to the Department of Behaviorology or the Department of Praxics, but we have not decided this issue yet.

We are experimenting with offering students various incentives in return for particularly rapid and accurate work. At present, we program our software so as to not permit any student to sign on after putting in 60 hours of work per week. If they reach this limit while engaged in instructional coursework they are given a 15 minute warning before the program shuts down. Although we do have a surprising number of students who regularly put in a full 60 hour week of CAI, most do not take advantage of this opportunity. As mentioned earlier we are piloting a partial tuition rebate program for timely progress through a given set of instructional materials. Public posting did not prove effective in this regard, as the hard-working students got accused of being nerds by their less industrious peers.

Several of our dormitories are structured as experimental communities along the lines of Walden Two. The college environment lends itself to such experiments, given the existing arrangements for communal dining and recreation. The students are voting with their feet in that applications for enrollment in the Walden-Life dormitory program vastly exceed the available spaces. As a consequence we are

WALDEN "U"

converting an increasing number of dormitories to the Walden-Life program, and even have some of the younger faculty living in student housing under this arrangement. It is quite popular and serves as a natural laboratory for our psychology, sociology and economics faculty to conduct real-life experiments in communal living arrangements. We hope to present several papers describing the Walden-Life program and initial results at next year's ABA convention.

Needless to say, the prevailing attitude of the faculty and administration at Walden U is that of experimentation. Our faculty are constantly tinkering with improving our existing software and in authoring new systems. Indeed, a major component of our workload consists of CAI software development. Shortly we plan to make available as a line of commercial software products, well-tested and proven coursework we are calling "WaldenWare," each with several years of experience in teaching hundreds of students to document its instructional value. We anticipate a great demand for these products in many areas of the curriculum, and will offer free demonstration disks to qualified faculty (programs good for only 20 students, after which they become inert). This presentation will enable the teacher to gain a fair appraisal of the quality of the CAI program, along with student feedback. We anticipate that many will get "hooked" on WaldenWare through these demonstration disks and shortly thereafter seek a site license for the regular software. Indeed, we predict that within five years WaldenWare coursework will be a common feature on most college campuses, with the income from this venture supporting our ongoing operations at Walden College, as well as returning some funds to the Foundation for Behavior Analysis in Education.

Summary

Walden U represents the fulfillment of the dreams of many readers of this journal and of numerous behavior analysts no longer with us. The existence of our college may have come as a surprise to many of you. A deliberate policy of maintaining a low profile was decided upon by the Trustees from the start. If we made mistakes, we wanted ample opportunity to rectify them quietly. We needed time to develop, pilot test, and refine our CAI courseware, administrative structure, and to get accredited.

The presentation of Walden U as an accomplished fact, as a present day educational option that has proven its pedagogical viability for the past five years, and one carefully guided, nurtured and designed by leading behavior analysts, nullifies the naysayers, and silences the pessimists who assert that "It couldn't be done" or that "It wouldn't work." The Walden U program does work and we are not alone. In an article appearing in the October 2nd 1991 issue of the *Chronicle of Higher Education*, Project "Synergy" was described, where 84 faculty from 22 colleges carefully reviewed academic instructional software. The best of these CAI programs are being employed in the developmental studies program at Miami-Dade

THYER

Community College, involving hundreds of students, many of whom are minorities of color. A comparative study of student learning found that the CAI approach produced superior learning relative to conventional instructional methods, with lower drop-outs and a more rapid mastery of the material (see Watkins, 1991).

Each week dozens of new pieces of instructional software appear on the market, some of which are quite well designed. In recent years we have read of entire colleges being purchased by private organizations. Several small American liberal arts colleges have been purchased by Japanese consortia; Jerry Falwell founded and administers Liberty College; Oral Roberts has Oral Roberts' University; and the Coors brewing family has taken over control of the University of Denver, a private institution. Why shouldn't we behavior analysts have done the same? In fact, I am pleased to announce that the Foundation for Behavior Analysis in Education has recently completed negotiations for the acquisition of a second liberal arts college, one located in Washington state, and is now looking into the purchase of a third institution, in upper New York state. The start up costs in terms of money and time will be considerably less for these second and third iterations of Walden U, given the groundwork we have laid already. The Foundation envisions an eventual consortium of behaviorally-oriented institutions of higher education, with faculty and student exchange programs, the ready transfer of academic credits, the sharing of instructional software, etc.

If this discussion of Walden U interests the reader, I invite you to become better acquainted with our program. Come and visit us for a few days. By donating 2 hours of labor per day, scholars and potential students may explore the Walden U program for as long as you desire, live in our dorms, eat in our dining rooms, test out our CAI system of instruction, and visit with our faculty and students. Our enrollment is expanding and we welcome transfers from undergraduates currently matriculated at other accredited institutions, as well as recent high school graduates. We also have need of talented faculty across all areas of the undergraduate curriculum and welcome serious inquiries.

REFERENCES

- Skinner, B. F. (1948/1976). *Walden two*. New York: Macmillan.
- Watkins, B. T. (1991, October 2). Using computers to teach basic skills: Miami-Dade Community College seeks to augment its many remedial courses. *The Chronicle of Higher Education*, A23-A26.