

# 学習の学習

# Learning Learning

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あけましておめでとろごぞひます。

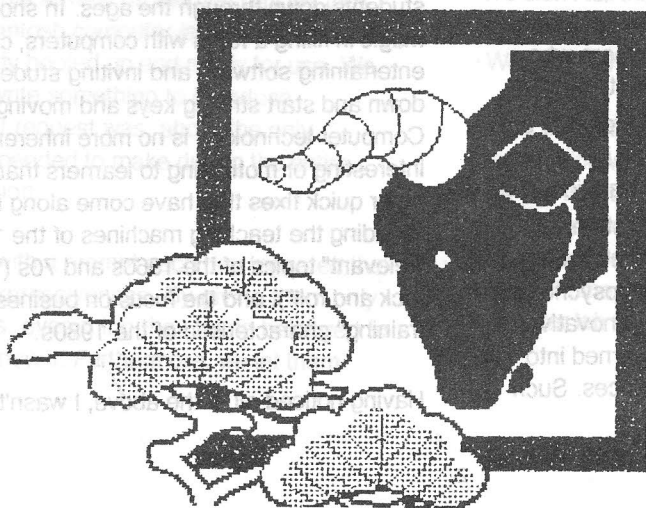
皆さまお元気で、良いお年をお迎えのことと存じます。『学習の学習』は、本号から新しい編集者と、新しいコラム編集者で出発することになりました。まず最初に、今まで過去数年間に渡り、『学習の学習』の編集に多大な努力を傾けてくださった青木直子さんとリチャード・スミスさんに感謝の意を表したいと思います。この号から谷口すみ子とスティーブ・コーンウェルが共同編集者となりますが、これからも引き続き、『学習の学習』が皆さんに役立つ情報をお届けできるように努力するつもりです。どうぞ、読者の皆さんのご希望をお聞かせください。また記事やご意見などの投稿ももちろん大歓迎です。1997年が、良き学習の年となりますように。皆さんからのお便りをお待ちしています。

スティーブ・コーンウェル, 谷口すみ子

**A Happy New Year!**

We hope your holiday's were safe and that the New Year is off to a good start. This issue of *Learning Learning* starts with new co-editors and new column editors. First of all, we'd like to give our special thanks to Naoko and Richard for their tremendous work devoted to the publication of *Learning Learning* for the past few years. This is Sumiko and Steve's first issue as co-editors and we'd like to continue making *Learning Learning* a publication that is as useful and informative as possible. So let us know what you'd like to see, or better yet, submit an article, anecdote, opinion piece, etc..... Let's make 1997 a good year for learning! Looking forward to hearing from you.

Steve Cornwell & Sumiko Taniguchi



# On Using Computers as a Tool for Learning

Bill Bernhardt

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Bill Bernhardt teaches writing courses at City University of New York. He is a long time practitioner of Silent Way and founding president of Association of Science of Education. "On Using Computers as a Tool for Learning" by Bill Bernhardt will appear in two parts. In part one Bill raises issue with the notion that computers are a cure all for educational problems. He goes on to describe a computer writing workshop he worked on with "at risk" kids, and then describes some of the few flexible software programs he likes to use. Part two will describe two additional projects Bill has worked on: a multidisciplinary writing/research course that used the internet, and an e-mail /telecommunication project with a school in Brazil. If readers have any questions or comments about this article, please fax or e-mail the editors. We will contact Bill in order to keep a dialogue going to increase our understanding of computers as tools for learning.

For the past few years teachers and students in schools and universities all over the world have been moving into computer "labs." I feel that I must put that word in quotation marks because the word "lab"(or laboratory) conjures up the image of an atmosphere of experiment and innovation that is really quite foreign to most computer-equipped classrooms. They are really just traditional 19th century "factory-style" classrooms with rows of fixed desks which, instead of being empty on top have machines bolted to them. There is a white board (using dustless markers instead of the traditional chalk) at one end of the room and a special desk for the teacher.

If one of the educational reformers of 50 or even 100 years ago were to look in through the window in the door, he or she would see the familiar scene of students bent over their work (keyboards, in this case) as the teacher moves among them to monitor whatever appears on their screens (surfing the Internet and computer games having replaced sneaking a comic book between the pages of one's school text), and to make sure that they are addressing the assignment.

The approach to learning shared by many computer scientists, software developers and teachers who use computers pays lip service to concepts such as "active learning" and the "interactivity" of teacher and learner, but most of what actually goes on in computer-equipped classrooms follows traditional methods of instruction. These technologists and educators tend to think that an "innovative" pedagogy is one which derives from the behaviorist psychology of several decades ago. This so-called innovative pedagogy breaks up whatever is to be learned into little bits, arranged in hierarchical sequences. Such

an approach may in some cases respect the organization of a particular body of information. However, it doesn't acknowledge or respect the powers of learners.

Further, much of the software used in computer classrooms has been strongly influenced by entertainment media. Bright lights and loud noises are thought to be "motivating," especially to young learners. Many of designers believe (and behaviorist psychology would support their view) that learners need external rewards ("positive reinforcement") in order to participate actively. Hence the rise of "entertainment," programs which profess educational aims but display the look and feel of advertising or MTV.

Therefore, it's not surprising that in spite of all the money that has been spent on touting computerization as the cure for all educational ills, it doesn't always work. Our reformer, looking through the window in the doorway, might observe that many of the students in today's computer classrooms seem just as bored and distracted as any other group of students down through the ages. In short, there is no magic in filling a room with computers, creating entertaining software and inviting students to sit down and start striking keys and moving a mouse. Computer technology is no more inherently interesting or motivating to learners than any of the other quick fixes that have come along in the past, including the teaching machines of the 1950s, the "relevant" topics of the 1960s and 70s ("drugs, sex and rock and roll"), and the focus on business and job training" characteristic of the 1980s.

Having noticed all of the above, I wasn't interested in

computers when they first started becoming popular in education. The Apple II invaded American classrooms while I was away teaching in China, during 1981-2. When I returned to New York, everyone I knew seemed to be suddenly talking about "wordprocessing," but I still resisted. It was only when I actually started writing with a computer a year or two later that I recognized why Dr. Gattegno had (for many years previously) spoken so enthusiastically about a technology which seemed so different from charts and rods. I discovered that I could use a computer to accomplish much more within a given time span. My powers of expression were enhanced without the need to become a "computer expert" in any sense. In fact, thousands of hardware and software engineers had worked on my behalf to create a technology that permitted me to swiftly acquire "know how" without requiring me to "know about." I was eager to share this experience with my students.

Moving my classes into computer labs over the succeeding 12 years has given me the opportunity to work with my students in ways that are compatible with *The Silent Way* and *Words in Color*: respecting the powers of learners; subordinating teaching to learning; working on the students while they are working on the material; educating awareness. I have found ways to apply computers to learning in a way that makes sense to me.

\* \* \*

During July, 1991, I collaborated with Frances Petterson, an English teacher from Dreyfus Intermediate School on Staten Island. We conducted a twelve-day writing workshop for ten students between the ages of 12 and 16 who were considered to be "at risk" of dropping out of school due to physical or emotional disabilities, family problems, poverty or lack of interest.

When the students arrived on the first day we took them into a Macintosh computer lab with all the machines already booted up and ready for use. We asked them to write something to introduce themselves; that request was about the only contribution we needed to make during the entire three-hour session.

Providing them with a prompt each day triggered their creativity and expressiveness. By giving them only the briefest hints, everything they wrote belonged to them and they knew it. Furthermore, we let them

teach themselves (and each other) the technical aspects of wordprocessing including use of the keyboard and mouse, inserting text, cutting and pasting, changing fonts and sizes, printing, etc. During subsequent sessions we encouraged them to re-read their own work to see what they needed to do to increase clarity and correctness before receiving any feedback from us. Later, we circled or underlined errors in their printed texts so that they could make their own corrections and changes. Then we accepted whatever they submitted as "finished" work without further comment or criticism.

Samples of their finished work was collected into three class "books," which they reproduced and distributed to readers. Doing this gave them the experience of becoming "published" authors. Enough copies of their first collection, *The Book of Excuses*, were sold at \$1.00 each to earn the money to pay for a lunch-time pizza party. Each sentence in this book began with the words, "I can't write today because...."

What was most striking to me about this experience wasn't what we, the teachers, did, but what we didn't do;

- We didn't try to motivate them.
- We didn't explain the prompts or suggest what to write.
- We didn't instruct them in how to use the computer.
- We didn't correct their work or explain their mistakes except in response to direct questions from them about particular words or sentences.
- We didn't give them any advice about writing.
- We didn't comment on the content of their writing.
- We didn't tell them to be concerned about correctness or the appearance of their words on the page.
- We didn't try to keep the room quiet.
- We didn't tell them how great they were or compare one person's participation with another's.
- We didn't evaluate any of their work.

It was difficult to get the students to give us verbal feedback on what they were getting from the course; they felt that they weren't in school and therefore didn't need to answer our questions. But they came back day after day, sometimes arriving an hour or two ahead of time and waiting patiently for the door of the computer lab to open.

As I continue to use computers in my writing classes I am always hearing about wonderful new software for other purposes such as language learning (speaking and listening), literature, history, etc. These materials are usually rather expensive, especially when compared to the cost of a set of charts or a couple of boxes of rods. Furthermore, even when they are useful, they tend to have very limited utility and can often be replicated through the use of much simpler (and less expensive) materials.

A program called Timeliner (Tom Snyder Productions) is a good example of what I mean. This piece of software can be used to create "timelines" such as students might use in charting important events in their own lives or in history. It's easy to use and produces beautifully printed results. It respects the powers of learners and is devoid of "edutainment" features. But is it an instrument that one can use in a wide variety of circumstances? Does it really add resources to what one can do on one's own without a computer? No, I don't think so.

Other than wordprocessing software, I haven't found much to interest me as a teacher who already has access to the rods, charts, wall pictures and printed materials for The Silent Way and Words in Color and knows how to use them across a broad range of situations and circumstances. Storybook Weaver/My Own Stories (MECC), KidCad(Broderbund) and a few other, similar programs are the exceptions. I have been working with Storybook Weaver for about five years and I continue to find new possibilities each time I bring it up on the screen.

Storybook Weaver divides the screen into two "windows:" a "text window" for writing text and a "picture window" for assembling pictures using catalogues of visual images supplied by the program. Basically, it provides an opportunity for the user to work simultaneously with imagery and language. For a teacher familiar with The Silent Way, it provides a powerful supplement to the rods and pictures.

It makes sense to use Storybook Weaver in a Silent Way classroom as soon as students have worked on the sounds of the language and begun their exploration of the functional vocabulary for spatial/temporal relations. Working with one small group of students clustered around a single computer I started by putting the image of a bicycle into the "picture window" (I could also have used the software to

immediately supply the spelling of the word "bicycle in the "text window" if I had wanted to) and held up the keyboard. One student took the keyboard from me and wrote, "one bike." Then I put the images of three more bicycles on the screen. Each image was initially identical but, as I arranged them in the picture window, I quickly made the following changes before holding up the keyboard again:

- I changed the color of two of the three new bicycles.
- Of the two bikes that were the same color, I enlarged one and reduced the size of the other.
- I placed one bike in front of the others.

The students were then able to speak and write statements about what they saw. Later they made changes in the imagery themselves and then changed the text accordingly.

Working with native speakers of English on another occasion, I used essentially the same imagery but demanded a much more precisely worded text. Then, I instructed the program to advance to the next "page", at which time the students had to write about the image in the past tense (the image was no longer before their eyes).

At other times I have used Storybook Weaver (and My Own Stories, which contains more realistic visual imagery) to generate pictures that would be compatible with stories in Short Passages or other written sources. And students have used Storybook Weaver and My Own Stories to write and illustrate their own stories or create new versions of stories and articles which they have read.

If a school is able to buy multiple copies or a site license, it's possible for each students to work with his or her own individual copy of the program. However, I have found that working in small groups is often more productive. It is easy to lose focus when one has such a rich program to work with and so many choices of image. And as with the rods, more restricted assignments usually produce greater results than when the learners are given total freedom.

In the near future, my college will be able to project the contents of a computer screen onto the wall without having to darken the entire room. This will make it possible for me to use Storybook Weaver with a full-sized class much as I work now with Silent Way and Words in Color charts and wall pictures. (To be continued...)

## 学習のための道具としてのコンピューター使用について

ビル・バーンハート

ニューヨーク市立大学 スタッテンアイランドカレッジ

ビル・バーンハートはニューヨーク市立大学でライティングのコースを教えています。長年サイレント・ウェイの実践を行っており、Association of Science of Educationの設立者であり会長でもあります。ビル・バーンハートによる「学習のための道具としてのコンピューターの使用」は2部に分かれて掲載されます。第1部では、ビルはコンピューターは教育的問題に対し万能薬となるという考え方に対し問題提起をしています。彼は「危機にさらされている」子供達のためのコンピューターライティングワークショップについて述べ、また自分が使いたいと思っている数少ない柔軟性のあるソフトウェアのいくつかを紹介します。第2部ではビルが手がけているあと二つのプロジェクトについて説明します。つまりインターネットを使った総合的なライティング/リサーチコースと、ブラジルの学校といっしょに行っている電子メール/遠隔地通信プロジェクトのことで。

もしこの記事を読まれた方で、なにか質問やコメントがあれば編集者にファックスまたは電子メールで送ってください。ビルと連絡をとりながら、学習のための道具としてのコンピューターに関する私達の知識を増やしていくための対話を続けていきたいと思います。

# # #

過去数年間、世界中の学校や大学で、教師や学生、生徒達はコンピューター“ラボ”に移動しつつある。私はラボという言葉を用符で括らねばならない。なぜなら“ラボ”（あるいはラボラトリー）という言葉はコンピューターを備えている殆どの教室とは全く異質の、実験や革新の様相を呈したイメージを彷彿とさせるからである。それらはまさに固定された机の並んだ19世紀の伝統的“工場スタイルの”教室でしかない。ただ机上が空いているのでなくボルトで固定された機械が備え付けられている点異なるが、また部屋の片隅にはホワイトボード（伝統的なチョークの代わりにかすでないマーカーを使用する）と教師のための特別な机がある。

もし50年あるいは100年前の教育改革者の一人が戸口で窓越しに見たとすれば、生徒がかがんで作業をする（この場合キーボードに）見慣れた光景が見えるだろう。教師は画面に現れるものはすべて監視しようと学生達の間を動きまわり、課題をやるようしむけている。（教科書の間に漫画本を挟んで盗み読みするのに替わってインターネットをサーフィンしたり、コンピューターゲームをするのを監視するに）

多くのコンピューター科学者、ソフトウェア開発者、そしてコンピューターを使用する教師が手がけた学習への取り組みは、“活動的学習”や教師と学習者の“相互作用”といったような概念に口先だけの好意を示すが、コンピューターを設置した教室で実際に起こっていることの殆どは伝統的指導方法に従っている。これらの技術者と教育者は“革新的”教授法は数十年前の行動心理学に由来するものであると考えがちである。このいわゆる革新的教授法は、学習すべき対象を階層的に順序立てられた情報の断片に分解する。そうしたアプローチは場合によっては特別の知識体系を尊重する。しかしながらそれは学ぶ側の力を認めたり、尊重したりはしない。さらに、コンピューター教室で使われるソフトウェアの殆どは娯楽メディアに強く影響されてきた。眩しい光や大きな騒音は特に若年学習者に“やる気を起こしている”と考えられた。デザイナーの多くは（行動心理学ではそうした見地を支持しただろう）学習者を活動的に参加させるためには外的報酬（“正の強化”）が必要だと信じている。かくして教育的目的を掲げているがまるで広告やMTVのような外見とフィーリングを持ったプログラム“edutainment”（education +entertainment）が生まれるのだ。

従って、あらゆる教育的病いに対する治療として強引に売り込まれたコンピューター化は、莫大な出費にもかかわらず、必ずしもそれはうまくいってない。先ほどの改革者は、戸口越しに見て今日のコンピューター教室にいる生徒達の多くが、昔の生徒集団と同様、ただ退屈して気が散っているだけなのを目にするだろう。手短かに言えば、コンピューターで部屋を埋め、娯楽的なソフトを作り、椅子に座ってキーを打ちマウスを動かすよう生徒達を招くことは、魔法でもなんでもない。コンピューター技術は過去にできた他のにわか仕立てのものと同じく、学習者にはそれ自体おもしろいかか動機づけになるとはいえないのだ。にわか仕立ての問題解決策とは1950年代の教育機器、1960、70年代の“身近な”話題（“麻薬、セックスおよびロックンロール”）、また1980年代に特有のビジネスへの関心と職業訓練も含まれる。

上記のこと全てに気がついていたので、コンピューターに教育上人気が出始めた頃も私はそれに関心がなかった。私が1981年から82年の間中国へ赴きアメリカを離れている間に、アップルIIがアメリカの教室に侵入した。ニューヨークに戻ったとき、私の知っている全ての人は突如“ワープロ”について話しているようだったが、私は依然抵抗した。なぜガッターニョ博士が（その何年も前に）チャートとロットとは大いに異なると思われる技術について熱心に語ったのかを悟ったのは、私が実際に1,2年後にコンピューターを使って文章を書き始めたときのことだった。私は与えられた時間以内により多くのことを成し遂げるためコンピューターを使うことができるということを発見した。“コンピューター専門家”になる必要などなく、私の表現力は高められ

