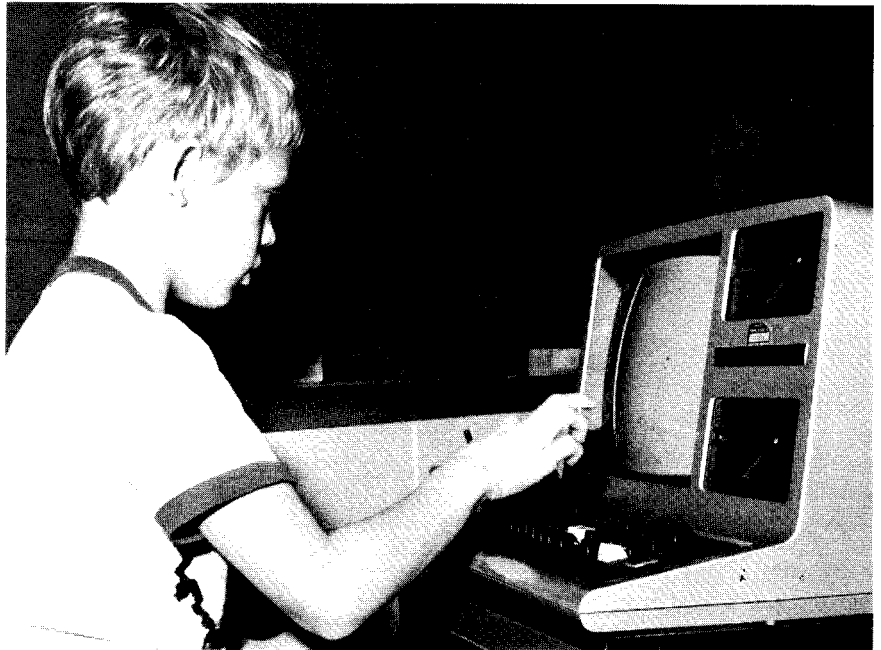# Computing With Class

The Computer as Student

In a recent column we alluded to the merits of teaching as a form of learning. We have already discussed how computers can function as students for teachers. They're a little slow when it comes to conceptualizing, but once taught, they will seldom be dissuaded from the task at hand.

In this issue, we will deal with the concept of the computer as a student's student. One of the best ways to learn is to teach. That may sound dichotomous—how can you teach something you don't know? But don't be too quick to dismiss an idea simply because it doesn't seem to make sense! How many times have you sent a student to the dictionary to find out how to spell a word? How many times have you yourself had to teach a topic you didn't feel qualified to teach, but managed by extra study and reading ahead of the class?

Of course, the risk of reading ahead is that there's always someone who might be reading ahead of you. The excuse "hold that thought 'til next Tuesday" works only so many times before students begin to suspect!

With a computer, that kind of problem can be avoided. If the computer knows that you don't know, it won't tell anybody. So the idea of students teaching a computer what they don't already know begins to take on credence. The trick is to set the stage for the computer to demonstrate that it has learned whatever you've assigned the student to teach it.

Say, for example, you want your students to teach the computer the capitals of various countries. You might assign students to write a computer program that has the computer quiz other students, using a series of multiple choice questions on their knowledge of countries and capitals.

Obviously, in order for the computer to successfully (and accurately) administer such a quiz, it must first know which capitals go with which countries. And, if it's up to your students to teach it, they will inadvertently learn the information as they convey it to the computer. (They might even learn a bit about programming, but for the purposes of this article, that learning is strictly an aside!)

Computer learning really comes into its own in the area of mathematics and geometry. Say you assign your students to teach the computer to draw a circle (or oval, spiral, triangle, or cube). The circle is an excellent example inasmuch as it requires the student to understand the use of sine and cosine functions.

Now the emphasis is not on whether students can calculate sine and cosine in less than 15 hours and fewer than three notebooks, but whether they can breathe life into the functions by incorporating them into a program that tells the computer how to use them productively.

Just as teaching students first how to spell words with letters, then how to make sentences with words, and finally how to capture thoughts and feelings in poetry and essays, enabling students to teach computers what the students should learn is a valid, if novel rea-

Computing With Class
THE COMPUTER AS STUDENT

son to teach programming.

You can even use this approach to ingrain concepts of logic and theology. Supposing you assign students to program a computer to give a Bible study that produces texts to back up theological points if the end user enters the "wrong" multiple-guess answers. When the burden to teach the computer falls on the student, he now has a reason to look up the texts, do the research, verify the information—in a word, immerse himself in whatever topic he is attempting to teach the computer.

The byproduct of all this computer teaching is a wealth of useful (we hope!) programs to inflict on younger students not yet versed in computer programming for learning or teaching. Synergy at work!

So now your task is twofold: (1) learn (and teach) enough about programming to equip your students with the raw tools to teach computers a thing or two; and (2) think up some creative assignments for your students to empower your computer to teach. To begin, you might assign your budding programmers to have the computer teach other students the language BASIC or LOGO, and branch out from there.

Instead of your trying to get something through the proverbial "thick skulls" of your students, you'll get to share their joy of discovery. Let them try to get the same things through the thicker skulls of computers. If nothing else, students may gain greater insight into the difficulties you face in teaching them. And who knows? You might even learn a little more about computers and programming in the process.—Dave Ruskjer. □

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CORRESPONDENCE SCHOOL FOR SDA STUDENTS

Study International offers a high school diploma program that includes religious courses along with the standard secondary subjects.

Religious Home Study Schools

Each year, hundreds of thousands of home study course enrollments are recorded worldwide by religious schools that are accredited members of the National Home Study Council. The oldest, Home Study International (founded by SDAs in 1909), offers course work for kindergarten, elementary grades, junior high, high school, college, and adult education. The largest, International Correspondence Institute (founded in 1967 by the Assemblies of God), offers degree and nondegree courses in Bible studies, evangelism, and theological studies. Newest on the scene is Catholic Home Study Institute (founded in 1983), which offers course work in Roman Catholic doctrine, history, and a variety of religious topics. Burgeoning activity by these religiously based schools attests to the fact that a number of religions recognize correspondence instruction as an important part of their mission.

Home Study Degree Programs

Over the past century, complete degree programs offered by correspondence instruction and other external modes have become commonplace. Sullivan's *Guide to External Degree Programs in the United States* revealed that in 1983 100 accredited institutions offered degrees in 103 major fields of study.[3]

These institutions are accredited by one of six regional accrediting associations or by NHSC. A total of 61 of these institutions have degree programs with no requirement for on-campus attendance. The remaining programs require from two days to four weeks of on-

campus attendance for students earning a degree.

Three SDA colleges currently offer external degrees—Southwestern Adventist College, Columbia Union College, and Atlantic Union College. Although these schools require short on-campus stays each year, students complete most of their work off-campus.

External Degrees Through HSI

From the church's world divisions come a steady stream of requests for college and graduate degrees. Especially in the developing nations of Africa, Asia, and Latin America we have an enormous need to train pastors, teachers, and other workers. The people

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Since 1900, more than 70 million Americans have studied by mail.

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of these nations are tremendously eager for education; however, they have few Adventist colleges to serve them. The large number of baptisms in many world fields makes it unlikely that we can build enough colleges to meet the growing demand for Adventist education.

Furthermore, in many developing nations the church would be unwise to divert the enormous sums necessary to build many large colleges and universities. Yet these countries have many Adventists who desperately need Christ-centered educational opportunities.

Because of the high cost of traditional education, the only hope for an Adventist education in these countries lies in the creation of cost-efficient and fully accredited distance education programs.

To meet this need, Home Study International is making plans to offer both bachelor's and master's degrees on a totally external basis for Adventists outside North America. This will probably be accomplished through an affiliation