Microcomputer Software Copyright Dilemma

Elaine S. Reber

Background

About four years ago, the College of Agriculture Computer Committee recognized a growing need for a computing course that emphasized computer applications in agriculture. During the first semester (Winter 1980), a course was taught to 30 students using the university's mainframe computer system. The system worked reasonably well but was cumbersome. More important than the system's deficiencies was the realization that the computing tool of most benefit to the agriculture student was a **microcomputer.**

As a result, the Computer Committee proposed to the college administration that a room be equipped with microcomputers to serve its students, staff and faculty. The proposal was accepted and the project was jointly funded by special equipment dollars from the campus administration and the Agricultural Experiment Station.

Micromputer Facility

The committee formulated the preliminary plans for equipping the facility. These included 12 stand alone Apple II Plus microcomputers and assorted peripheral devices. In the process of preparing the equipment order, it became apparent that there were improvements in both software and hardware which should be considered. The advancements provided the opportunity to try a multi-user network where each station had full computer power yet had the ability to share costly peripherals such as mass storage, printers, plotters or graphic displays as well. The Corvus Constellation Network System was chosen after seeing it in operation at a Springfield High School in Springfield, Illinois. Because of the ability to share peripherals using the network concept, we were able to equip the room with 14 Apple II Plus microcomputers (instead of 12), two dot matrix printers, a plotter, two analog-to-digital converters (Versawriter and Apple Graphics Tablet), two floppy disk drives, a 20 megabyte Winchester disk and a DC/Hayes microdem. In addition, several software packages were purchased including VISICALC, FORTRAN, PASCAL, CCA (database management system), Superwriter, etc.

Initial Course Format

In the Fall 1981 semester, the computing course was taught using the microcomputers. Students gained "hands-on" computing experience, learned a computer science vocabulary and the programming language — BASIC, gained an understanding of computing and were able to write relatively simple application programs. Eighty students were enrolled in the course. Networking the computers worked exceedingly well in that situation.

Faculty and Staff Seminars

That fall we also used the room extensively for computer literacy seminars for our faculty and staff. In those seminars, we introduced BASIC, several uses of the electronic spreadsheet, Visicalc, and the authoring language, PILOT. Teaching BASIC in the facility worked well but trying to teach VISICALC was a real problem. First of all, it ws illegal to copy VISICALC to the hard disk and Visicorp, the company that marketed VISICALC was not helpful. Eventually they agreed to sell us multiple copies at reduced prices but since we only had two floppy disk drives, that did not solve our problem. So, each time a seminar was offered we had to gather together 12 disk drives and borrow copies of VISICALC. It was obvious that we could not offer our faculty a place where they could use VISICALC for their classes. Since demand for PILOT was less, it created less problems. Indeed, it appeared that networking with commercial software packages had limited usefulness for us.

Intermediate Course Format

The next semester over 300 students enrolled in the course. This demand was greater than anyone had anticipated. The format of the course needed to be changed. Lecture and labs were separated which resulted in trying four individual lectures and nine laboratories.

Present Course Format

Since the fall of 1982 there have been approximately 260 students in the course each semester. Now, there is one large lecture class. The lecturer uses an Apple IIC microcomputer in conjunction with monitors throughout the room to show computing examples and teach application programs. The lab structure remains the same with nine laboratories with 28 students in each.

The course and the facility have continued to undergo change practically every semester. Currently, BASIC is taught for one half the semester and most of the remaining time is devoted to teaching the commercial packages:

(a) Multiplan, an electronic spreadsheet
(b) PFS, a data base management system
(c) BANK STREET WRITER, a word processing program
(d) APPLEWORKS, an integrated word processor, spreadsheet, data base system
(e) SOURCE, a commercially available time share system

Outside speakers from local computer stores and a farm management extension specialist supplement the course material.

Reber is a computer specialist in the College of Agriculture at the University of Missouri, Columbia, MO 65211.

Changing Needs

Since the facility was first equipped, the needs of the college and the course have changed. Software packages have become available that could be integrated into the main computing course as well as other college courses. However, the main obstacle to using the commercial software packages continues to be the problem of infringement of copyright laws. It was clearly illegal to download the programs from the hard disk to the microcomputers connected in the network to support 14 simultaneous users. The software vendors all offered discounts for multiple copies of their products but none of them would enter into a local networking agreement. Our final resolution of this problem was to purchase 12 additional floppy disk drives and multiple copies of each software package.

Copyright Infringement

Our software-copyright problem is not unique. The influx of microcomputers into academic communities is causing educators to face continuously the legal and ethical issues of whether commercially marketed software should be duplicated.

Section 107 of the 1976 Copyright Act states that it is permissible for teachers to make multiple copies of copyright works for classroom use if the following guidelines are used to determine how much copying is fair. "... factors to be considered shall include (1) the purpose and character of the use, including whether such use is of commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount of substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or the value of the copyrighted work."[1] In trying to adhere to the law the educators have little trouble with the first two factors outlined above, but the last two criteria create serious problems. Almost without exception programs must be copied totally to be useful. Moreover if sufficient numbers of copies are made in classrooms, then it will impact negatively upon the market. Therefore, copying software fails the "fair use" test.

In addition to the legal issue, there is an ethical one. The educator has a moral obligation to create an ethical framework for his students. Using software that has been illegally copied, and allowing students to pirate programs is clearly unethical. It challenges the system that says that software piracy is not permissible.

A reasonable analogy is the educator who has written a textbook. That individual would not look kindly on the photocopying of such a publication for distribution to a class of students. Ultimately the author and publisher would be discouraged from creating and selling additional publications. This same situation is true for the programmer and vendor; copying the programmer's product will ultimately produce less revenue and discourage better software from being created and marketed. Indeed, the cost benefit is not as substantial when a book is photocopied as when a software package is copied. The estimated cost to copy a 300 page book that would sell for $20.00 is a fraction less than the cost to purchase it. However, the cost to copy a $700 program is the cost of a disk ($1.00) and the time required is approximately 60 seconds. Thus the incentive here is much greater.

Needs of the Educators

The other side of the issue deals with the educator's dilemma. They have the following problems:

(a) Limited budgets
(b) Need to preview programs (75% of software vendors do not allow previewing)
(c) Need for multiple copies of software packages

Needs of the Vendors

The software vendor is really a publisher. In order to receive a return on the initial investment (buying the software) sufficient quantities must be sold or the vendors will apply their efforts to a different market place or product. Vendors will not handle marginally profitable products.

Copying software has become such a major issue that many publishers are staying out of the software market until the laws are better defined. In a survey of software producers, it was found that 50 percent of the respondents considered copying software a serious threat to their profits.

Resolution

In an effort to resolve some of these issues, organizations such as Computer Using Educators, the Minnesota Educational Media Organization, and the International Council for Computers in Education have met. Some of the areas that the organizations have each addressed are:

(a) Backup copies at time of purchase
(b) Multiple machine licensing and discount for multiple copies
(c) Local networking agreements
(d) On-approval purchase

Some of the organizations have made recommendations and had discussions with vendors. As a result some vendors are developing more realistic policies and providing backup copies, on-approval purchases, and multiple copy discounts. Local networking agreements are more complex and remain unresolved.

Conclusions

The whole microcomputer industry is changing rapidly. Predictions are hard to make but on the basis of the information currently available, the following seem reasonable.

[1] "Copying Computer Software for Educational Purposes: Is it Allowed," *Personal Computing*, November 1983, pp. 236-237, 239, 242.

(a) Small companies will fail and disappear
(b) Larger companies, financially sound (diversified) will remain
(c) External pressures will force these companies to acquiesce to the educational requirements outlined in this presentation.

References

Bassler, Richard A. "Software, Piracy, Ethics, and the Academician," Paper presented at the Western Educational Computing Conference and Trade Show, San Diego, California, November 1982.

Bunnell, David. "Innocent Victims of the War Against Software Piracy," *PC World*, June 1984, pp. 13-14.

Hoover, Todd; Gould, Sandra. "The Pirating of Computer Programs: A Survey of Software Producers," *Educational Technology*. October 1982, pp. 23-26.

Katz, Roy. "The Software Legal Book," *Personal Computing*. March 1983, pp. 160-163.

Seymour, Jim. "Special Report: The Software Outlaws," *Today's Office*, August 1984, pp. 20-26.

Computing Teacher. "ICCE Policy Statement on Network and Multiple Machine Software," September 1983, pp. 18-22.

Computing Teacher. "The Copying Problem," March 1983, pp. 35-36.

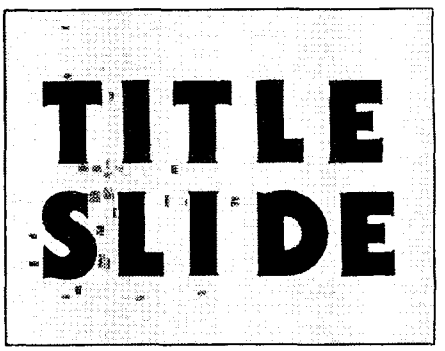
Personal Computing. "Copying Computer Software: What Risks, What Penalties?" May 1983, pp. 131-134.

Personal Computing. "Copying Computer Software for Educational Purposes: Is it Allowed," November 1983, pp. 236-237, 239, 242.

Instructional Innovator. "The Problem of Copying Computer Programs Without Breaking the Law," January 1984, pp. 36-37.

HOW TO

So You Want to Make Good Textual and Title Slides The Easy Way!



James E. Christiansen
and Jimmy G. Cheek

Abstract

Instructors have two options available for making colored, high quality textual, information, graphic, or title slides quickly, simply, and easily. The first technique is to use the negative slide film, Kodak Vericolor S0-279 or 5072, in combination with various filters, different exposures, and standard C-41 processing, to prepare slides with clear colored backgrounds and white or lightly colored letters and lines from black-and-white printed, typewritten, or pasted up copy or artwork. The second technique is to photograph directly off the screen of a microcomputer color monitor using selected color graphics programs to prepare slides with colored backgrounds and differently colored letters and lines.

Have you griped about the dull, colorless, fuzzy, unattractive textual and title slides with which you have been bombarded at professional meetings, seminars, and presentations? Have you griped about the cost of **good** professionally made title slides? Have you complained about the length of time it takes between photographing text or title material and being able to project it on the screen as slides? Help is at hand; read on.

What is the Problem?

Up to now it has been difficult, costly, and time-consuming to produce high quality textual or title slides. Ordinary color slide film, whether "tungsten" or "daylight," can be used to make excellent textual slides. However, to provide "snap" and billiance to the backgrounds of such slides usually requires typing or printing on brilliantly colored and often expensive background paper, the use of differently colored plastic or acetate sheets placed over the textual material and photographed through a polarizing filter, and applying rub-on transfer letters or Kroy tapes of words and sentences to acetate sheeting or colored background paper. Preparing and then photographing slides under these conditions takes considerable time and care.

Good "Kodalith" slides (reverse-text slides of white text or lines on a black background) can be made by instructors in their offices using ordinary photographic equipment and readily available chemicals. However, the process does take time, is somewhat expensive, and requires care in preventing or in correcting white "pinholes" in the negative film.

"Burn-over," or "Burn-in," or "Lithochrome" slides (reverse-text slides of colored text or lines on a black background or superimposed onto a pictorial background) are made in a three-step, time-consuming process in photographic laboratories. Such slides, while very attractive and effective, are expensive ($2.12 to $3.30 each) and often require a turnaround time of three to five working days.

Writing in the **NACTA Journal,** Cotter and Gomez (1979) concluded that "high quality slides can only be obtained through the use of professional methods by photographic laboratories" (p. 25). Consequently, until

Christiansen is a professor in the Department of Agricultural Education, Texas A&M University, College Station, TX 77843-2116. Cheek is a professor in the Department of Agricultural and Extension Education at the University of Florida, Gainsville, FL 32611.