

Selected References

- Callen, R.W. and Holen H. Harold. "3Rs & C (Computer Illiteracy)," Discover, Spring 1982.
- Chignell, Mark H. and Richard M. Lacy. "Project Jefferson: Integrating Research and Instruction," *Academic Computing*, pp. 12-17, 40-45.
- Conway, Richard. "Business and Management, Xcell: An Interactive Factory Simulation," *Academic Computing*, pp. 30-31, Spring 1987.
- Deppa, Joan, "Interacting with Technology: Creating a Class in Interactive Media," *Academic Computing*, pp. 12-13, 44-45, Sept. 1987.
- Gallagher, John P. "Managerial Computing and the Business School Curriculum: Assimilating and Accommodating the Professional Workstation," *Academic Computing*, pp. 16-19, 46-48, Oct. 1987.
- Gerber, Barry. "A Computer Network for Social Scientists,"

- Academic Computing*, pp. 30-31, 53-58, Jan. 1989.
- Graves, William H. "CAI: Computer-Assisted Involvement," *Academic Computing*, pp. 6-9, 57-60, Spring 1987.
- Lyman, Peter. "The Computer Revolution in the Classroom: A Progress Report," *Academic Computing*, pp. 18-20, 43-46, March/April 1988.
- Manderscheid, Lester V. "Undergraduate Educational Opportunities in the Face of Declining Enrollments," *Amer. J. Agr. Econ.*, 70(1988):985-93.
- Mendenhall, Marcus H. "Microcomputer Controlled Data Acquisition and the Interaction of Students with Laboratory Computers," *Academic Computing*, pp. 20-23, 44-45, March 1989.
- Padberg, Dan. President's Column, "Curriculum Development," AAEA Newsletter, Vol. 10, #1, Jan./Feb. 1988.
- Sculley, John, "Educon '87," *Academic Computing*, pp. 27-29, 63-64, Nov. 1987.

Microcomputer Instructional Modules With Batch-File-Driven Menus

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Abstract

This paper presents techniques found useful by the author to assist with microcomputer instruction. The rationale, along with a procedure for installing lessons onto a diskette are discussed. Batch-file-driven menu systems are introduced which can be used to automate the printing of lessons and to display messages for the microcomputer-using student. Methods are given for installing sounds in these batch file menu systems to get the attention of students.

Introduction

From the time when microcomputers were introduced in the late 1970's, their use has rapidly increased in the fields of agriculture, education, and extension. Most states have taken steps to adopt this changing technology. Mississippi now has Tandy Radio Shack TRS-80 and MS-DOS compatible microcomputers in every county extension office. Most Mississippi vocational agriculture teachers have IBM-PC Junior microcomputers. Farmers are using microcomputers for decision making and record keeping. Agri-scientists are using microcomputers for research, teaching, and reporting.

In the Department of Agricultural and Extension Education at Mississippi State University a course is offered in the "Application of Computer Technology to Agricultural and Extension Education." The enrollment has been a mixture of undergraduate and graduate students. Up to half of the students have been from other countries. Most of the students have a background in agriculture, agricultural education, or extension education.

Agricultural educators need skills in using software programs that are already written instead of developing programming competencies (Bowen, 1984; Sutphin, 1984). This course, therefore, is designed to educate students in microcomputer applications such

as word processing, spreadsheets, database management, BASICA, and MS-DOS. In 1987, the process was begun to place the lab lessons on microcomputer diskettes. Now, with the suggestions of several semesters of students, disk-based lessons have been developed for the lab sections of the course taught at Mississippi State University.

Why disk-based?

Occasionally a student will need to miss a lab meeting. Since the material is on the disk, the student can print the appropriate work sheet and follow the steps for the lesson that was missed. This frees the lab instructor to provide assistance as needed without requiring a "repeat performance" of the lab lesson thus increasing the efficiency of the instructor's time (Becker & Shoup, 1985).

The disk-based lessons provide some degree of individualized instruction. The lessons were designed with the field-based student in mind. Vocational agriculture teachers and extension agents have used the disks off-campus to teach themselves microcomputer applications.

It is possible to have a variety of student learning activities going on simultaneously in a microcomputer lab with the printed lessons. Students that need to make up a lab lesson can be in the lab with other students working individually on separate projects.

Some students in a class will have more microcomputer skills than other students and want to explore more advanced applications of the software. Students have also used this shareware software for class assignments requiring skills beyond those taught in the lab. Advanced lessons on most of the modules permit students to learn on their own as their needs increase.

Occasionally it is necessary to use a substitute lab instructor. With the lessons already prepared on the disk and ready for the students to print out, it is easier for the transition to another instructor.

Construction Methods

These modules are designed around a batch file technique for automating repetitive DOS commands

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(Norton, 1987, Zimmerman, 1987). By typing the word MENU, the student can display a list of options on the screen. In doing this the student has activated a batch file called MENU.BAT (see Table 1) which in turn displays a text file called MENU.TXT on the screen (see Table 2). By selecting an option letter from the menu, the student activates another batch file (A.BAT, B.BAT, etc.) which automatically carries out tasks such as printing a lesson or changing the printer's spacing (see Table 3).

All the batch files and text files were made with the PC-WRITE word processing program. PC-WRITE saves documents in an ASCII format that is capable of being displayed on the screen with the DOS command TYPE. Any other ASCII text processor would also be suitable. Most popular word processors are able to save a document in the ASCII format.

Subdirectories can be used to group similar files together on the disk. In the MS-DOS module the lessons are grouped together in a LABS subdirectory and the batch files are grouped within a BATCHES subdirectory. This facilitates finding a particular file and organizes the disk's directory (Goodwin, 1987).

Sounds

Sounds, such as music or beeps, add an element of surprise and amusement as the students work with the microcomputer. Beeps can call the attention of the computer user to the screen for an important message. Here are some little-known ways of producing sounds that may be useful to you.

With the PC-WRITE program, it is possible to incorporate beeps into batch files and text files. In a batch file, a message can be displayed with the ECHO command followed by the message. The batch file will cause the microcomputer to beep at the point of the message if it includes a diamond shaped symbol made with PC-WRITE. By holding down the alternate key and pressing the letter "M," a diamond symbol can be incorporated into an ECHO command message. This same [ALT-M] technique can be used in text files to cause the printer to beep as the file is printed or to cause the microcomputer to beep as the file is displayed on the screen with the TYPE command.

An alternative method for making the microcomputer beep is to use "COPY CON" or EDLIN to create batch files and text files (see a DOS manual for instructions). With these methods, at the location you want the beep to occur, hold down the control key and press G. A-G symbol will appear. This [CTRL-G] method produces the same beep as the [ALT-M] method described earlier (Rubenking, 1989).

Sounds can also be made in other ways. See your BASICA manual concerning the PLAY and BEEP commands. Utility programs such as PLAY.COM by Michael J. Mefford (1987) are also useful for music and sounds in batch files.

Disk Contents

Modules that have been developed so far use shareware software. This shareware marketing concept

Table 1. Example MENU.BAT Batch File that can Display a Menu on the Screen

Batch file commands	What each command does
ECHO OFF	Stops the display of subsequent commands.
REM Filename: MENU.BAT	Documents the name of this file.
CLS	Clears the screen.
TYPE MENU.TXT	Displays the MENU.TXT file on the screen.

Table 2. Example MENU.TXT Text File that can be Displayed by the MENU.BAT Batch File

The PC-WRITE 2.7 LAB DISK is designed to simplify the teaching and learning of word processing. Select an option below then press ENTER. Type MENU at the DOS prompt to re-display this menu. Type GO for an introduction to the disk.

.....

- A. Set the printer to single spacing if it is double spacing.
- B. View information on the program (UPDATE.DOC).
- C. Change the printer driver.
- D. Print a summary of commands (PC-WRITE.SUM).
- E. Print the work sheet for lesson 1.
- F. Print the evaluation sheet for lesson 1.
- G. Print the work sheet for lesson 2 (evaluation included).

Table 3. Example E.BAT Batch File that can be Selected from the Menu to Print a Lesson from the Disk.

Batch file commands	What each command does
ECHO OFF	Stops the display of subsequent commands.
REM Filename: E.BAT	Documents the name of this file.
CLS	Clears the screen.
ECHO Ready the printer...	Displays a message to the computer user.
PAUSE	Waits for the user to strike a key.
TYPE LESSON.1 - PRN	Prints the lesson text file.
CLS	Clears the screen.
TYPE MENU.TXT	Re-displays the menu.

Table 4. Example Introductory Screen Supporting the Shareware Concept.

*** PC-WRITE 2.7 LAB DISK ***

This disk was designed for the use of students enrolled in AEE 5203/7203 (Application of Computer Technology to Agriculture and Extension Education) at Mississippi State University.

A menu can be displayed at any time from the DOS prompt by typing: MENU. The student can print a PC-WRITE summary, two lesson work sheets, and an evaluation sheet from the menu.

Only selected portions of the original two-disk program are included for instructional purposes. This disk is not intended to replace the purchase of a licensed copy of the full program and documentation. For information on obtaining a licensed copy, write to:

Quicksoft
219 First North, #224
Seattle, WA 98109

encourages microcomputer users to distribute copies of the software to other microcomputer users. If anyone finds the software useful, the authors of the software

expect the user to submit a small registration fee. Official registration entitles the user to printed documentation, user support, and notification of, or discounts on, future updates of the software. The shareware concept is encouraged in an introductory screen such as the one in Table 4.

A title screen is provided to identify the program and to indicate the latest update on the lessons. A batch file display the title screen when the student starts the microcomputer or displays the menu depending on the module in use. A title screen from the MS-DOS lab disk is given in Table 5.

Table 5. Example Title Screen Identifying the Module in Use

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. . . MS-DOS LAB DISK . . .
Prepared by:
XXXXXXXXXX (Information omitted for article review)
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX
Latest update: February 1989
Based on a concept suggested by Dr. Phil Burlak.
Enter [GO] for an introduction to the disk or
enter [MENU] for a list of options.

```

From a disk menu, students can print lesson work sheets that cover applications of the software and commands from elementary to more advanced complexity. Evaluation activities are included with the lessons along with questions for thought. Where applicable, these activities encourage the students to be creative. This might involve making a text file describing their opinion on batch files or it might be making up colorful names for a data base mailing list.

These lessons have been designed to guide the student through the steps to perform basic microcomputer applications. The instructions were developed with the field-based professional and the independent student in mind. With the printed work sheet, the student can work on their own with a minimum of assistance from the instructor.

Modules Currently in Use

Presently there is one module for each section of the lab as the course is currently taught in the Department of Agricultural and Extension Education at Mississippi State University. These modules will work satisfactorily on MS-DOS compatible microcomputers with at least 256K of memory. The following modules have been developed to teach introductory microcomputer applications:

1. MS-DOS 2.11 Lab Disk: Disk operating system commands and BASICA
2. PC-Write 2.7 Lab Disk: Word processing
3. PC-Calc 2.0 Lab Disk: Spreadsheet applications
4. PC-File III 4.0 Lab Disk: Data base management

Students have received the disk-based lessons very well and have found the menu systems to be helpful. This disk-based, menu-driven concept could be applied to any educational activity which uses the microcomputer as an instructional aid.

Summary

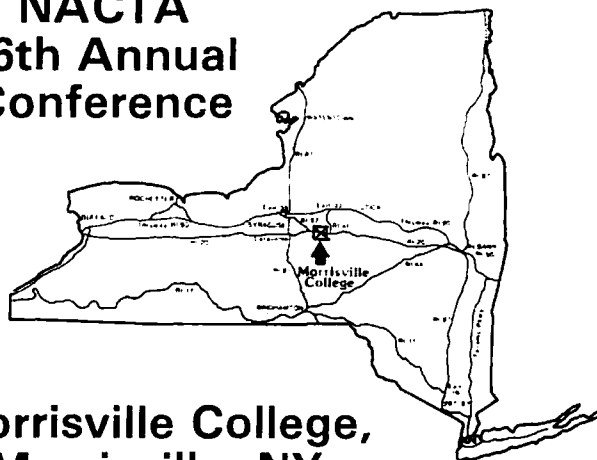
In this age of information and technology transfer, disk-based lessons can simplify microcomputer based instruction both in formal class, or lab settings or informally as self-study guides for off-campus teachers, extension agents and others in need of this training.

Warren Martin, senior fellow at the Carnegie Foundation for the Advancement of Teaching (DeLoughry, 1989) encouraged educators to keep teaching and technology in perspective. Educators should bring technology into the service of teaching. Martin also warned educators to avoid the "dazzle effect" of technology and to present information in the form which students need. Disk-based instructional modules can be useful for this purpose.

References

- Becker, W. J., & Shoup, W. D. (1985, Summer). The Microcomputer as an instructional tool. *Journal of American Association of Teacher Educators in America*, 26(2), 65-72.
- Bowen, B. E. (1984). *Microcomputer competencies needed by Cooperative Extension Service agents and vocational agriculture teachers in Mississippi*. (Monograph). Mississippi State University: Department of Agricultural and Extension Education.
- DeLoughry, T. J. (1989, March 8). Professors are urged to devise strategies to help students deal with 'information explosion' spurred by technology. *The Chronicle of Higher Education*, A13, A15.
- Goodwin, M. (1987, December). Hard disk navigation tips. *PC World*, 310-315.
- Mefford, M. J. (1987). PLAY.COM (Computer program). New York, NY: PC Magazine's The PC Utilities, Ziff-Davis Publishing Company.
- Norton, P. (1987, December). Power your PC with batch files. *PC World*, 316-323.
- Rubeking, N. J. (1989, May 16). User-to-User. *PC Magazine*, 8(9), 327-334.
- Sutphin, D. (1984). *Applications of microcomputers and need for computer competency development perceived by New York State agricultural, secondary, and post secondary instructors and extension agents*. Paper in the proceedings of the 11th annual National Agricultural Education Research Meeting. New Orleans, LA.
- Zimmerman, E. R. Jr. (1987, October). Batch menu system *REMark*, 8(10), 59-62.

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