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COMPU-SPELL[™] SYSTEM DISKETTE

Applesoft, 48K, DOS 3.2 or 3.3



At Edu-Ware Services, a team of experienced professionals is firmly committed to producing educational software of unparalleled design and quality.

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Edu-Ware Services, a California-based corporation, was established in 1979, when the microcomputer industry was still in its infancy. Since that time, Edu-Ware and Interactive Fantasies have earned a sound reputation among dealers and end users.

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PROBLEMS?

Edu-Ware products are supported after sale by a 30-day Limited Warranty, rapid service, and low-cost updates and replacements.

Should you encounter problems with a system or its operation, feel free to contact an Edu-Ware service representative at (213) 706-0661. If our service staff cannot alleviate the trouble over the phone, you may simply complete the enclosed service form and mail it with your diskette to Edu-Ware's Service Department. If your service requires payment, please include a check or money order.



Often program errors result from a defective disk drive, not the software. When you do have trouble, compare the operation of several commercial software programs you may own. If the trouble is consistent, consult your computer dealer.

Edu-Ware's warranty is null and void if the user has modified the program, physically damaged the diskette, or obtained the product through an unauthorized or illegal distribution channel.

Edu-Ware Services reserves the right to make improvements in its products at any time, without notice, and to replace any defective products with improved versions. The company is not responsible for the suitability of its products to the user's application; this is the purchaser's responsibility.

Any incidental and consequential damages caused by malfunction or by breach of warranty (expressed or implied) are not the responsibility of Edu-Ware Services, Inc. Such damages are excluded from both property damage and personal injury liability claims. Some states do not allow exclusion of incidental or consequential damages, so the above may not apply to all users.

COMPU-SPELL™ SYSTEM DISKETTE

Power and versatility make COMPU-SPELL an ideal learning tool for the home or classroom.

COMPU-SPELL's elaborate operating system accommodates one to sixty learners. Learners simply identify themselves and are automatically routed to their current position. COMPU-SPELL monitors progress; updates the learner's position when a unit is completed; and retains a list of "review words" from those recently missed.

At no time does the computer reinforce an incorrect spelling. High resolution displays ask the learner to replicate spelling words which are embedded in sentences. Spelling units allow words to be displayed in various textual formats, with up to 25 spelling words appearing in 20 lines of text per unit.

COMPU-SPELL supports new learning, review, or remediation. This system diskette contains the COMPU-SPELL program, operating system, and sample spelling files. You may either use Edu-Ware's DATA DISKETTES (available for grade levels 4, 5, 6, 7, 8, and Adult/Secretarial) or build your own word files on a blank diskette.

This package contains comprehensive documentation which illustrates all procedures. The documentation also defines COMPU-SPELL's instructional model; suggests formats for classroom and home use; and delineates ways to tailor the system to individual classrooms. Options include dual disk drive and printer with Apple interface.

Requires Applesoft, 48K, DOS 3.2 or 3.3

Edu-Ware products are strongly supported after sale through a Limited Warranty, rapid service, and low-cost updates and replacements.

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Scotch®

744-16
disket

diskette r
Single hea
16 sectors
Reinforced hole



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COMPU-SPELL™ SYSTEM DISKETTE

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Requires 48K Applesoft

I . 3 . 1



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interactive fantasies™



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Keep them far away.



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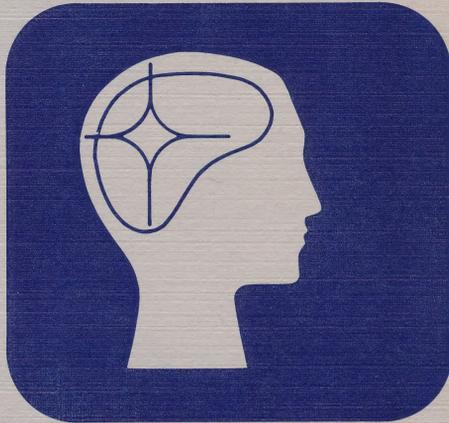


Bending and folding
may damage.
Handle with care.



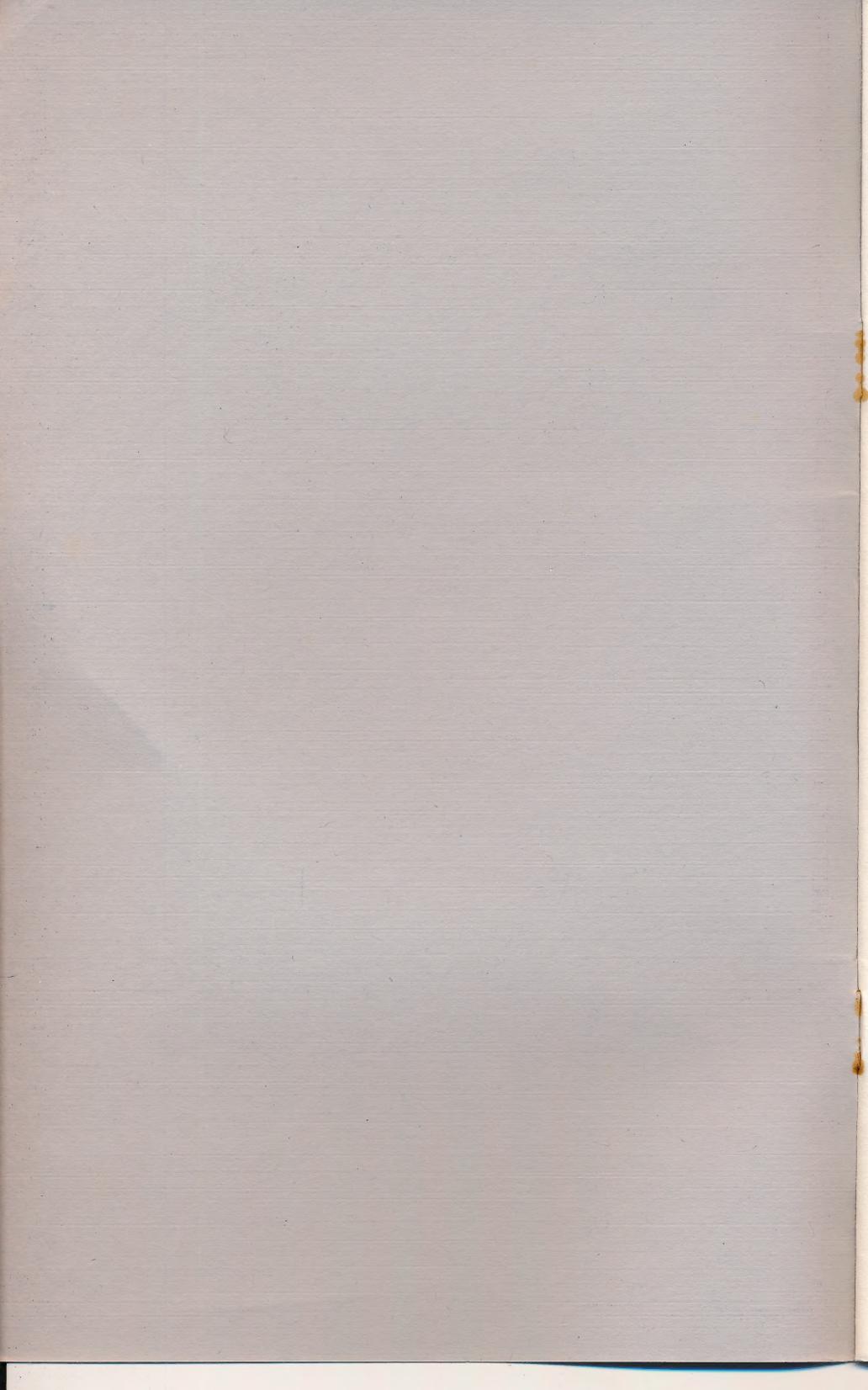
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50° to 125° F.

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COMPU-SPELL[™]

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COMPU-SPELL
Version 1.3

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COMPU-SPELL Programs, Data Units and Documentation
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ACKNOWLEDGEMENTS

COMPU-SPELL was developed exclusively by Edu-Ware Services, Inc. a software development company specializing in instructionally valid C.A.I.

The efforts of a number of individuals brought this product to fruition:

Steven Pederson invented the COMPU-SPELL concept, designed, wrote and documented the programs, and created Edu-Ware's high-resolution (upper and lower case) font.

Sherwin Steffin contributed his expertise in Instructional Development to the COMPU-SPELL learning algorithms and documentation. He also wrote some of the spelling units and aided in system testing.

Cindi Riddle wrote the bulk of the lower level spelling units and served as chief copy-reader for Version 1.3.

David Mullich wrote most of the upper level spelling units and was the principal tester of the system. He also contributed to its design.

I. INTRODUCTION

1. What is COMPU-SPELL?

COMPU-SPELL is an instructional computer system which employs perceptual principles and positive reinforcement to teach spelling. Basically, it uses the computer as a silent and infinitely patient shaper of behavior—teaching by refusing to allow the learner to enter an incorrect response.

For both home and classroom usage, COMPU-SPELL is available with data diskettes suitable for grades 4-8 and an adult/secretarial level. Features include individual learner file management, user file building capabilities, and high-resolution displays. (See page 3 for a complete description of features.)

The COMPU-SPELL system features:

- ** A "positive reinforcement only" design which eliminates all sources of negative reinforcement such as distractors and error messages.
- ** A custom-designed high-resolution font which provides upper and lower case letters in both "normal" (white-on-black) and "inverse" (black-on-white) type.
- ** Records which route each learner through the system individually, maintaining his/her current location, net progress, and the eleven spelling words most recently missed in post-testing.
- ** Up to 60 individual learners per system.
- ** User options which control post-test rigor and adjust to both "ideal" and "minimal" systems.
- ** Spelling units which allow the words to be displayed in a variety of textual formats.
- ** Up to 25 spelling words in 20 lines of text per unit, 75 units per data disk and 8 data disks per system.
- ** Ease of operation which allows learners to boot the system directly to the learning routines.
- ** Pre-packaged, user-modified, and user-created spelling units may be used exclusively or combined with data diskettes.
- ** Five pre-packaged data disks (levels 4-8) are available for younger pupils, while an additional disk (level 99) has been designed for adult/secretarial learners. (Each may also be modified by the user.)
- ** File-building routines which allow user construction of totally customized spelling units and data disks.
- ** A system design suitable for both adjunct and stand-alone learning in home and classroom environments.
- ** Detailed documentation which describes both the operation of the system and the instructional model behind it.

2. A Demonstration

Using the COMPU-SPELL system involves a good deal of file handling, option choosing, and customization. A special "demo mode" has been included to allow you a quick look at the COMPU-SPELL learning routines.

Your COMPU-SPELL disk is initialized for demonstration; simply booting the disk will access a demo. We suggest you do this now.

After you boot the SYSTEM disk, you will see the Edu-Ware logo, followed by the "DEMONSTRATION MENU." From here you may choose any one of six demonstration units, each consisting of a sample from one of the Edu-Ware data levels. (Note that levels 4-8 correspond to those grades in school. Level 99 consists of frequently misspelled words taken from a secretarial handbook.) Choose one, and the demo will give you a peek at the system's learning routines.

After a few moments, the unit you have selected will be displayed on the screen. At first, you will see a series of sentences. Then, some of the words will switch to inverse type. These are the spelling words. When you press the [SPACE BAR] the first of the spelling words will blank out. Now, the computer is waiting for you to type in the word. Correct letters are displayed on the screen, but all incorrect responses are completely ignored. Should you need to look at the word again, press the [ESC] key.

As words are spelled without errors or a "second look," they are restored to normal type. COMPU-SPELL will loop through the unit until all of the spelling words have been successfully spelled.

Beyond this learning routine lies a post-test. Here the line is blanked out beyond the spelling word. However, you may spell the word in any way you wish, and you may use the backspace [←] key to correct any errors you see. The purpose of this is to determine whether you have remembered the correct spelling. You may have some trouble recalling what the words were, but there are a number of user options for adjusting this. (Note that this becomes much more difficult if you already knew how to spell the spelling words, and thus spent a minimal amount of time in the learning routines.) Correct post-test spellings are switched to normal type. Incorrect spellings are removed and replaced with the correct spelling in inverse type.

Depending upon your success in the post-test, you either will be returned to review those words you have missed, or "graduate." Since this is just a demonstration, "graduation" returns you to the demonstration menu. If you have seen enough, just press the [ESC] key a couple of times. It will give you an option to quit.

3. How to Use this Documentation

The remainder of these pages explains ways which allow you to adapt COMPU-SPELL to a multitude of varying environments and learners.

The documentation is divided into three sections, each with its own distinct purposes. We suggest you first read the INSTALLATION section in order to fully understand the capabilities of the COMPU-SPELL system.

The PROCEDURE/USER ROUTINES section contains detailed instructions for each part of the system, and for each of the system's features you are using. Once you have determined the manner in which you wish to implement COMPU-SPELL, this section will serve as your reference guide.

Finally, as EDU-WARE takes great pride in providing C.A.I. which is instructionally valid (as opposed to a weekend programmer's special), the last section describes the system's INSTRUCTIONAL MODEL.

4. How to Lose in a Hurry

We have taken pains to make this system as easy to use as possible. However, there is no substitute for a careful reading of this documentation. If you doubt us now, be sure to hang on to the Warranty/Service Request Form. We'll expect to hear from you.

II. INSTALLATION

5. Important Concepts

It is important to understand that there are two types of individuals who will have contact with the programs. In this documentation, "**user**" refers to the person (teacher, tutor, parent, etc.) who is managing the instructional system. "**Learner**" denotes the person who is working to improve his/her spelling skills. In some applications, especially with the adult/secretarial level, the user and the learner will be the same individual.

It is also helpful to be familiar with the conventions for prompting COMPU-SPELL. Often, two keys play very important roles. The [SPACE BAR] is used to verify information on the screen; proceed with the next step; or terminate single word or numerical entries. The [ESC] key is often used to abort routines; back-up; start over; or return to a previous menu. These keyboard functions are not always stated even though they may be active. As long as the learner follows the information on the screen, however, there is no chance to make a mistake if he/she attempts to use one of these keyboard functions. Keyboard functions not available will simply be ignored.

"**Options**" refers to a number of choices within the system which are left up to the user.

You should be aware that there are two kinds of diskettes used in COMPU-SPELL. The "**SYSTEM**" diskette contains the COMPU-SPELL programs; a list of the current options in effect; a list of the learners using the system and the units they are currently working on; and a group of demonstration units. "**Data**" diskettes contain between one and 75 spelling units, and may be purchased from Edu-Ware or created by the user.

The basic operation of COMPU-SPELL is to maintain a record of learners. Once the system has been set up by the user, learners need only boot the SYSTEM disk and choose their name from a list of all learners using the system. The program automatically routes them to their current position in the sequence of spelling units; monitors their progress; updates their position when a unit has been successfully completed; and retains a list of "**review words**" which consists of words recently missed during post tests.

6. System Environment

COMPU-SPELL has been designed to offer instruction suitable for home, classroom, and other learning environments.

As far as hardware is concerned, the following configuration would be ideal:

- ** APPLE II or II-plus computer containing APPLESOFT BASIC, 48K.
- ** 2 disk drives connected to a single controller card.
- ** 13-19" black and white monitor.
- ** 1 printer with standard Apple interface.

However, only a single disk drive, 48K and APPLESOFT BASIC are actually required.

For best results, we recommend that some attention be paid to the choice of a monitor. An integral part of COMPU-SPELL is its use of the Apple's high-resolution graphics to generate upper and lower case letters. Unfortunately, this can inhibit readability. Thus, we recommend using at least a 13" monitor or TV. Also, the displays must be shown in black and white. If you are using a color monitor, you should turn the color OFF.

7. System Set-up

Three tasks must be performed to set up your COMPU-SPELL system. First, determine what data disk(s) you will use and in what sequence. Second, set up files for your learners. Finally, examine the system options and determine if any changes in them would better meet your needs. Each of these steps is covered in detail in the next section on PROCEDURES.

Some discussion is appropriate here on setting up a sequence of data disks. In order to maximize the versatility of the COMPU-SPELL system, a wide range of choices have been provided in this area. Since each of the data disks is sold separately, home users can view the demonstration units as samples, and choose the most appropriate data disk(s). A teacher may employ the entire Edu-Ware sequence, or even design his/her own units. In all cases, routines within COMPU-SPELL allow the user to customize the system with a minimal amount of effort.

There is one important limitation to data diskettes. Once the sequence has been set up and put in use, altering the sequence will produce very strange and/or instructionally illogical effects. However, a user can easily add to the beginning or the end of the system. Each data disk can hold 75 units, and the COMPU-SPELL system can support up to eight different data disks.

The learner file set up is very simple. Included in the learner handling routines are some reporting capabilities which allow a user to monitor the learners' progress.

8. Learning with COMPU-SPELL

After setting up the system, the user must instruct the learner in how to use it, and then monitor the learner's progress.

In certain applications these steps can be completed quickly and easily. For example, an adult wishing to improve skills in spelling "hard-to-spell" words can purchase the system with the Secretarial (level 99) data disk and be working on the system in a matter of minutes. Classroom applications are far more demanding of the user. Though COMPU-SPELL goes to great lengths to make initialization and monitoring as easy as possible, it relies on a "human interface" to teach the actual use of the program.

The ease with which young learners can be taught to work with COMPU-SPELL unassisted will vary greatly with their computer literacy. While the system's operation was simplified as much as possible, the mere act of typing a word into the keyboard may prove difficult at first. (Indeed, this task has also been simplified by eliminating input distinctions between upper and lower case letters. The learner need only find the correct letter; the computer will display upper or lower case depending on which is correct.)

It is quite beyond the scope of this documentation to suggest an appropriate teaching style for this task. Thus, the following descriptions of the learner's tasks are intended for the user or adult learner.

There are **four sections** that a learner must contend with in order to use the system. Any learner who is self-sufficient in each of them will be able to work with COMPU-SPELL unassisted.

(1) Entry. The first section involves entry into the learning system. Here the learner must boot the SYSTEM diskette, select his/her name from the list which is displayed (by typing in the number which is adjacent to it) and insert a diskette into the drive as prompted to by the program. (Exception: if you are using a double drive system, and are using only one data diskette, the SYSTEM diskette may remain in drive 1 and the data diskette in drive 2. This is highly recommended for young learners.)

At this point, the learner will encounter three separate routines, which we will refer to as "**Spell 1**," "**Spell 2**," and "**Spell 3**."

(2) Spell 1 is the primary learning routine. Here, the text of the unit is displayed with the spelling words in inverse type. The learner must press the [SPACE BAR] (blanking out the spelling word) and type in the correct spelling. All incorrect responses are seemingly ignored, though the computer will loop back to the misspelled words until the learner has spelled all of them without any errors.

The only special key implementation in **Spell 1** is [ESC]. If [ESC] is pressed once after the word is blanked out, the word returns to the screen. If [ESC] is pressed again, the program will ask:

QUIT FOR NOW?

The [Y] and [N] keys are accepted in response. If the learner chooses to quit, the system returns to the list of learners. Otherwise, the learner is returned to the point from which he/she exited.

(3) **Spell 2**, the "Post Test," appears much the same as the first spelling routine, but functions somewhat differently. Here, in order to actually test retention of the words' spelling, the program will allow the learner to spell correctly or incorrectly. This is used as a basis for deciding whether to remain in the current unit, or to continue with the next one.

Two additional special keys are used in **Spell 2**. The left arrow [←] allows the learner to re-type in letters he/she wishes to change before they are "read" (and scored) by the computer. This is analogous to erasing or crossing out an answer on a paper and pencil test. Once the word is finished to the learner's liking, the [SPACE BAR] is used to enter it. The computer will change the type to normal if the answer is correct, or display the correct spelling in inverse if the word was spelled wrong.

At the end of **Spell 2**, the computer checks the learner's score against the minimum score required to pass (this score is a system option). If the score is inadequate, the learner is re-routed to **Spell 1**, but is only asked to learn those words which were missed on the Post-Test. If the Post-Test, is passed, the learner is told of his/her success, and routed into **Spell 3**.

(4) **Spell 3** will display up to 11 words which were missed by the learner in previous Post-Tests. It works identically to **Spell 1**, except that only the spelling words are displayed (no background text).

9. Playing "Safe"

Much of COMPU-SPELL's power comes from the fact that it is an instructional system which draws from an assortment of data bases. COMPU-SPELL utilizes various data files for its instructional material, for learner positions and review lists, and even to remember the configurations of the Apple-II system it is running on. From these files the system gains a good deal of versatility.

There is one drawback to a reliance upon magnetic data, however. Floppy diskettes are notorious for unexpected and unpredictable behavior. Edu-Ware has worked with the floppy disk for years now, and has come to view disk failure as a certainty. Sooner or later, all users will boot up the system only to find that it has ceased to function or is acting wildly. The cause of this trouble may be a malfunctioning disk drive or a thumbprint on the diskette. Regardless of the cause, however, the system is "down."

The following procedures will both minimize the chances of data loss, and maximize speed of recovery from failures.

(1.) *Handle the diskettes with care.*

Though diskettes do eventually wear out on their own, abusive handling can terminate their usefulness prematurely. Pay careful attention to the recommendations of the diskette and disk drive

manufacturers. Remember there are about one million "bits" of information on a single diskette.

Additionally, when COMPU-SPELL is used with large numbers of younger learners, the use of dual disk drives is highly recommended. When COMPU-SPELL is set up for use in such a system, the SYSTEM disk resides permanently in drive 1 during all learning operations. This protects the system and learner files from the thumbprints of over-eager learners.

(2.) **Back-up Learner Data.**

In multiple user situations, the files which point to the location of each learner in the sequence of data disks and spelling units is of vital importance. Fortunately, this can be backed-up both on hard copy (printout on paper) and on magnetic media.

In the learner file-handling routines which are provided to the user, reports can be run which print out the current status of each learner using COMPU-SPELL. From this report, one could build new learner files if something should happen to the old ones. This is a very important concept, since Edu-Ware can replace its system, but **not your files!**

COMPU-SPELL learner records may be backed up magnetically only if you have a DOS 3.3 system. To do this, initialize a blank diskette by the following command:

```
INIT BOOT, V27
```

Then, MUFFIN the COMPU-SPELL SYSTEM diskette. This back-up copy will work with DATA diskettes that you create yourself, but **not** those supplied by EDU-WARE. However, it will provide back-up learner information if you MUFFIN the SYSTEM diskette periodically. Should your SYSTEM diskette crash, list out the learner records to the screen or a printer from the back-up diskette and re-type the information onto another COMPU-SPELL SYSTEM diskette.

The frequency of "backing-up" will vary with the amount of use the system is receiving. In some cases a user will want to back up weekly or even daily. Remember, the time since you last copied your files represents the maximum amount of data you can lose. (If you do experience SYSTEM disk failure, you need only substitute your back-up for it.)

(3.) **Protect Irreplaceable Data.**

This applies to those who design their own data units. Since the user-designed units are unique and irreplaceable, special care is required. Though the Edu-Ware data disks cannot be copied, they can always be returned for service. Conversely, user-created disks can be copied infinitely. Many copies of these disks should be maintained, since each user-created unit represents a good deal of work.

III. PROCEDURES/USER SYSTEM

This section will explicitly describe the "nuts and bolts" of the COMPU-SPELL system. Currently, the user system is invisible, and booting the disk only produces the Edu-Ware logo and accesses demonstration units. Once the system has been set up, learners will find the same ease of operation as the system goes directly into learning routines from a boot.

The user routines are accessed by holding down one of three key-combinations during booting. These keys are [CTRL][T] (for "teacher"), [CTRL][U] (for "user"), and the right arrow key [→]. One of these keys must be pressed **before**

COMPU-SPELL

is displayed on the screen. Assuming your disk drive is booted from slot #6, you would type, from APPLESOFT:

PR#6 [RETURN] [CTRL][T]

(Any "control" character is typed by pushing simultaneously on the key [CTRL] and the letter key, as one does with a "shift" key on standard typewriters.)

Hold down the right arrow [→] key until you see the following menu:

COMPU-SPELL USER SYSTEM

*** MENU ***

- (1) SYSTEM OPTIONS ADD/DELETE/SEQUENCE DATA DISKS
- (2) LEARNER RECORDS
- (3) BUILD/EDIT DATA DISKS
- (4) USE LEARNING SYSTEM

=====

(0) EXIT COMPU-SPELL SYSTEMS

WHICH ONE ??

Incidentally, if you wish additional protection in keeping learners and other mischievous sports out of the user routines, a password option can be entered. If this is in use, the system will ask for the password before it reaches the menu. There is nothing tricky about this except that the backspace key [←] cannot be used when inputting a password. After four incorrect tries, the computer will beep repeatedly and blank out the computer's memory.

This section of the documentation is organized differently from previous sections. For each of the menus in the user system, each selection will be fully explained, including any sub-menus it accesses, before going on. In essence, it provides an "outline" of the user system.

In order to run the COMPU-SPELL system, it is necessary to (1) set up the system itself, and (2) set up the learner record(s). These tasks must be accomplished in that order. Please refer to the USER SYSTEM MAP on page 13.

**(1) SYSTEM OPTIONS
ADD/DELETE/SEQUENCE DATA DISKS**

This menu selection from the USER SYSTEM MENU allows control over both the computer system on which COMPU-SPELL is running, and the DATA disks that are being used. Choosing it (by pressing the [1] key) brings up the following menu:

```

COMPU][SPELL SYSTEM OPTIONS
*** MAIN MENU ***
(1) VIEW/CHANGE GENERAL OPTIONS
(2) VIEW/CHANGE DATA DISKS AND DATA DISK SEQUENCE
(3) ADD A NEW DATA DISK TO SYSTEM
=====
(Ø) RETURN TO USER SYSTEM MENU
**WHICH CHOICE?

```

From this point, the user has control over all of the system options. It is also an excellent point from which one function of a very useful key can be explored. At the upper left of the Apple II's keyboard is the [ESC] ("escape") key. To learners, this key is used either to re-display the spelling of a word, or to quit using the system. In the user system, this key often serves as a "back-up," offering return to an earlier menu when an incorrect choice has been made. As a quick demonstration, choose one of the selections from the current menu ((1)-(4)) and then press [ESC]. The program will return to the "Main Menu."

(1) VIEW/CHANGE GENERAL OPTIONS

These options affect the basic operating of the COMPU-SPELL learning system:

1. DISK DRIVES

This option allows you to tell COMPU-SPELL to run on one or two disk drives. Two drives have the advantage that the SYSTEM disk can be left in drive 1, and a data disk in drive 2. This minimizes diskette switching, eliminating it completely if only one DATA disk is used in the system. Thus, the system becomes more convenient and more "user-proof." When utilizing a dual-drive system, plug both disk drives into the same controller card.

WARNING: The system will not operate properly when set for a double drive system, and used on a single drive system. However, it is possible to boot the system, enter the user system, and change back to a single drive system by pressing [1] Single Drive System. Proper operation will then be restored.

2. PRINTER

When run on computer systems which include a printer, COMPU-SPELL can print the learner reports (described later in this section) on hard copy.

COMPU-SPELL is designed to route its output to a printer in one of two ways. For systems using a standard Apple-II printer interface, the user need only enter the slot number in which the printer interface resides. (Your screen will ask "[1]-[7] Standard Apple Printer"). The system is also capable of using printers which can be enabled through the use of a DOS command (choose "[9] Enter Non-Standard Printer Call"). This DOS command might consist of a BRUN of a printer driver routine which the user has BSAVED to the COMPU-SPELL SYSTEM disk.

If your printer cannot be used in either of these ways, you may attempt to modify the program to accomodate your printer. The learner print-outs are contained in the program "C][S.OC". Subroutine 90 is used to turn the printer on, and subroutine 95 to turn it off. If you attempt such modifications, be cautious. Before attempting to modify the COMPU-SPELL SYSTEM disk, make a "back-up" copy of it, to protect the program against irreparable damage. Making any system modifications will void your Edu-Ware Warranty.

3. PASSWORD

Users who feel that the "invisibility" of the user system fails to offer adequate protection against unauthorized meddling may add password protection to the user system. (The password must be entered before access to the user system will be allowed.) Passwords have a disadvantage, however, in that they can be forgotten!

A password may consist of any combination of characters which can be typed in from the Apple II keyboard. When a password is in use, it must be typed in exactly, including any blanks.

NOTE: To print out a password which has been lost or forgotten, enter the user system and press [RESET] when prompted for the password. (If a "*" prompt comes up, then type [3][D][Ø][G], press [RETURN].) Next type:

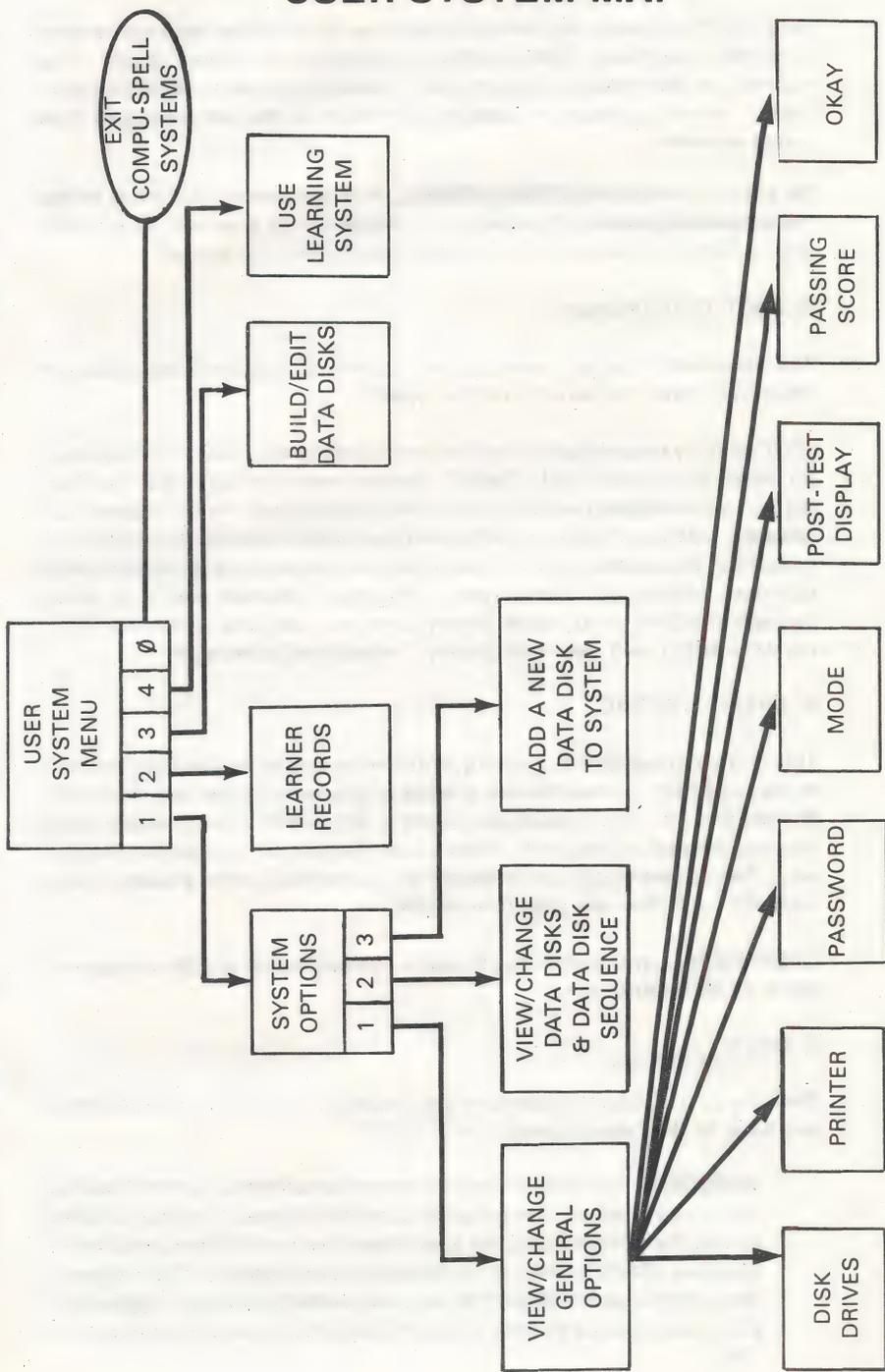
INVERSE: PRINT A\$(5) [RETURN]

The user system may also be entered directly from APPLESOFT by typing:

PRINT CHR\$(4) "RUNC" CHR\$(93) CHR\$(91) "S.SG" [RETURN]

However, it is much easier to remember the password or to not use one at all.

USER SYSTEM MAP



4. MODE

As an aid to software dealers and users who do not know which data level is suitable for them, COMPU-SPELL is shipped in "demo" mode. This means that after booting, the system control shifts to a "demonstration menu," which accesses a sample from each of the pre-packaged data levels available.

To actually learn with COMPU-SPELL, it is necessary to switch to the "use/learning mode." However, this mode is not available to the user until a data disk sequence has been created (see (2) below).

5. POST-TEST DISPLAY

The post-test "display" refers to the amount of text background that is displayed when the word must be typed in.

"Full" display means that the entire unit is displayed on the screen except for the spelling word itself. "Partial" display means that only the text leading up to the spelling word is shown in the post-test. Partial display will probably teach spelling more effectively, as it will be harder for learners to remember the words, forcing them to repeat the words more often which produces additional "overlearning." However, learners will also move through the data units more slowly, and may become frustrated. Thus COMPU-SPELL will use "full display" unless told otherwise.

6. PASSING SCORE

This is the percentage of spelling words which must be correctly entered in the post-test in order for the learner to graduate to the next data unit. Remember that the system maintains a list of the eleven words most recently missed in post tests (from which the learner was graduated anyway). The review words are re-taught each time the learner passes a post-test, although they are never re-tested.

COMPU-SPELL will automatically use a passing score of 80% unless you tell it to do otherwise.

Ø. OKAY!

Once these six system options are set correctly, the number [Ø] is typed to exit back to the "main menu."

WARNING: The system options are not actually changed on the disk until the system option program is exited. Hence, it is vital for users to exit the system using the appropriate menu selections and **not** by pressing [RESET], etc. If, accidentally or otherwise, this happens, the system options should be re-checked before proceeding further. (This also applies to data units, the data disk sequence and learner files.)

(2) VIEW/CHANGE DATA DISKS AND DATA DISK SEQUENCE

These routines allow a user to customize the material taught by COMPU-SPELL. Note that **data disk** (also: **data level**) refers to a diskette containing COMPU-SPELL learning units. Six such disks or levels are sold by Edu-Ware: levels 4, 5, 6, 7, and 8, which correspond to those grade levels, and level 99, which is designed for adult/secretarial users (containing those English words which are most frequently misspelled). Data disks also can be built by the user.

The **data disk sequence** is a progression of one or more data disks which is constructed by the user. In systems containing more than one data disk, learners who finish all the units on one data disk are automatically routed onto the next data disk in the sequence.

Initially, the view/sequence routines will merely state that the system contains no such disks. Once data disks have been added to the system, however, the routines provide an ordered listing of the disks. The sequence is altered and data disks are deleted by choosing the number to the left of the appropriate disk (or level), and following the screen prompts. Some warnings are also given, along the following lines:

WARNING: While the sequencing routines allow total control over the data disks and their sequence, if you have learners on file who are currently using the system **do not** change the sequence. Otherwise learners will find themselves repeating old material, or even "widowed" in the system.

Each learner's file contains only a record of his/her current position in the system. If the data disk currently in use is deleted from the system, the learner's file will point to a location that does not exist, producing the message:

SYSTEM ERROR: LEVEL NOT AVAILABLE

when an attempt is made to learn with the system. If the sequence is altered, learners may be dismayed when those who have completed a second data level, are routed back to material that has already been finished.

Two changes are possible while learners are "in progress." First, the system may be expanded, at either the beginning or the end. Secondly, additional units may be added to the DATA disks, using the file building routines. If units are added to a DATA disk, it is necessary to delete the DATA disk from the sequence, re-add the DATA disk to the system, and then edit the sequence to restore that level to its former position.

All in all, particularly in classroom situations, it is necessary to sequence the data disks satisfactorily before adding learners to the system.

(3) ADD A NEW DATA DISK TO SYSTEM

COMPU-SPELL will automatically enter both user-created and Edu-Ware DATA disk to its system when this menu selection is made. **The system will not recognize any data disks, including those sold with it and those built using its file building routines, until this routine is executed.** Once an additional DATA disk has been added, it is important to view the sequence (selection (2)) to verify that the disk sequence is correct and that no disk is listed twice.

Each COMPU-SPELL system can accommodate up to 8 DATA disks.

(Ø) RETURN TO USER SYSTEM MENU

Once again, the selections made through the user system are not actually entered into the system unless they are exited through the appropriate (Ø) menu selection.

(2) LEARNER RECORDS

The second step in setting up a COMPU-SPELL system is the establishment of learner records. Learner records are necessary both in a home environment of one learner, or a classroom environment of 60. Much of the power of COMPU-SPELL as an instructional system lies in the fact that each and every learner moves through the system at his or her own pace. The purpose of these records is to mark each learner's position and progress. Selection (2) from the USER SYSTEM MENU leads to the following sub-menu:

COMPU][SPELL LEARNER RECORDS

- (1) ADD A NEW LEARNER
- (2) REMOVE A LEARNER
- (3) EDIT A LEARNER RECORD
- (4) PRINT LEARNER REPORT/RESET PROGRESS INDEX
- (5) ALPHABETIZE LIST OF LEARNERS
- (6) CLEAR ALL LEARNER RECORDS

=====

(Ø) RETURN TO USER SYSTEM MENU

WHICH CHOICE??

- (1) ADD A LEARNER**
- (2) REMOVE A LEARNER**
- (3) EDIT A LEARNER RECORD**

Operations (1), (2), and (3) represent the basic file-handling routines with respect to the learner. They use two displays, one for learner selection (identical to what the learners will actually use to select their own names), and a second which displays the information currently contained in a learner's record.

The learner information display is shown both when a new learner is added and when a learner record is edited. In it, first and last name are separated to facilitate alphabetization. (Note that neither should contain a comma or colon.) As for placement, two sets of level # and disk # are shown. The first, called "current," designates the learner's actual place in the system (the next unit which he/she will be assigned to by the program). A second, called "origin," is a location in the system used as a marker in order to compute progress. The number of units between the current location and the origin comprises a "progress index" for that learner. It can be reset for an individual learner using the editing routine, or for all learners through the learner report routine. When the progress index is reset, the origin is set to the same level and unit as the current location, producing an index of zero.

When a new learner file is created, the system automatically assigns the new learner to the first unit of the first data disk in the system. However, it is possible to assign a learner to any point in the system.

Once the learner record has been adjusted adequately, select (Ø) to actually enter the record onto the disk.

To delete or edit a learner's record, the user must select the correct name from a list of all learners currently in the system. Press the number by the learner's name, and then hit [RETURN]. If there are more than twenty learners on file, typing [Ø] will produce the additional names. Note that the [ESC] key will exit back to the LEARNER RECORDS MENU.

COMPU-SPELL can handle up to 60 learners per SYSTEM disk.

NOTE: When a printer is being used with COMPU-SPELL, a learner report (selection (4) from the Learner Records Menu) should be produced before any file changes are made. Then, if any errors are made (for instance, the wrong learner is deleted) it is possible to restore the data by editing or adding records.

(4) PRINT LEARNER REPORT/RESET PROGRESS INDEX

This report is for use in classroom operations. It prints out each learner; his/her student number (this number is used internally within the system, but is unique to the individual learner and is never changed); current position in the system; progress index; and the origin from which the progress index has been computed. If the system options are set up to include a printer, then this report may be routed to hard copy.

After the report has been printed, an option is presented to reset the progress index. If this is elected, the previous location or origin will be set to the current location in the system for all learners, giving each a progress index of zero.

NOTE: The progress index is computed by measuring the number of units which lie between the learner's origin and current location. If the **current** data disk sequence has been changed since the learner passed through those units, or if the learner has been moved forward by the editing of his/her record, the index will not reflect true progress.

Under these circumstances, it is even possible for the origin to be farther along in the system than is the current location (which would yield a negative progress index). If this happens, or if the origin and/or current locations no longer exist in the data disk sequence, a progress index of "-1" will be printed, indicating that no true progress index can be computed. However, the existence of a positive progress index does not vouch for that index's validity. The user must protect this measure by being careful with the data disk sequence (following the rules, or ideally, not changing it at all), and resetting the individual learner's origin if he/she is moved through the editing routine.

(5) ALPHABETIZE LIST OF LEARNERS

This selection will alphabetize the list of learners for display in the records selection and learner reports. Depending on the number of learners on file, alphabetization will take between a few seconds and a couple of minutes.

(6) CLEAR ALL LEARNER RECORDS

This is a **purge** routine, which will eliminate all learner records, etc. It is designed for the convenience of classroom teachers facing a new academic year. (Home users will probably prefer to simply open additional learner files if they wish to re-start in their system.) When this selection is made, COMPU-SPELL will go into two rounds of extended, obnoxious beeping. This is meant to serve as a warning to the user, and as an alarm in case a learner finds this part of the system accidentally (kids can be amazingly adept at picking up computer skills). Two confirmation/exit points are provided. However, once this purge routine has been run, the files **cannot be** recovered.

(3) BUILD/EDIT DATA DISKS

Selection (3) from the USER SYSTEM MENU allows control over the actual spelling units (data) used in the system. The COMPU-SPELL "File Builder" may be used to create an entire disk full of spelling units or just to make some slight modifications or additions to the disks sold by Edu-Ware.

The File Builder Menu is somewhat distinct in that it contains upper and lower case letters:

COMPU[SPELL FILE BUILDER

- (1) Create a new disk.
- (2) Add unit to existing disk.
- (3) View/Modify existing unit.

=====

- (0) RETURN TO USER SYSTEM MENU.

WHICH ONE???

Regardless of the extent of the user's file building activities, a couple of rules should be followed:

1. **Work carefully.** COMPU-SPELL was engineered with the learner in mind. As a word processing system, it is barely adequate. All of the data entry routines are written in APPLESOFT BASIC, and execute slowly. Thus, it is easy to type faster than the computer will process the data.
2. **Check all work.** There is absolutely no substitute for a final run through the newly created or modified unit using the actual learning program. The final step to all processes with the File Builder is to set up a "test" learner file, assign it to the new or modified unit, and then carefully examine the unit in actual use.

(1) CREATE A NEW DATA DISK

This routine initializes and formats a new diskette so that COMPU-SPELL units may be stored on it. It will assign three attributes to the diskette:

The **disk name** is any title which the user finds helpful in identifying the DATA disk. This becomes the name used in the various disk sequence selection routines throughout the system. The DATA disk's name is never shown to learners.

Two numbers are assigned to each DATA disk (for simplicity's sake, they may be made identical). The **disk number** (same as the disk's "level") is the number used to identify the disk by the COMPU-SPELL SYSTEM. It is essential that no two disks be given the same number (in fact, Edu-Ware has reserved the numbers 4, 5, 6, 7, 8 and 99 since these correspond to the disks that are sold). The **volume number** is used in some routines to identify the disk as a DATA (not SYSTEM) disk. It can be any number between 1 and 253, inclusive, except 27. Data disks may use the same volume number and still be incorporated within a single system.

Once you have set these attributes, the program will initialize the diskette you insert as a COMPU-SPELL DATA disk.

WARNING: As the system warns, the initialization process will destroy any data which was previously on the disk!

(2) ADD UNIT TO EXISTING DISK
(3) VIEW/MODIFY EXISTING DISK

These two functions are lumped together as they involve identical input routines. The only difference is that selection (2) adds an additional spelling unit to a DATA disk, while selection (3) prompts for a specific unit and allows the user to modify it.

For both routines, the user is asked to insert the disk which is to be expanded or edited. If a previously created unit is to be edited, the system will display the number of existing units, and will ask for a specific unit to read and edit. The DATA disks sold by Edu-Ware may be edited and modified in the usual manner, but making any changes will void the warranty.

NOTE: If you fail to insert a valid COMPU-SPELL DATA disk, the system will alert you and then re-loop to the menu. However, upon the sixth such error the message:

?OUT OF MEMORY ERROR IN LINE 20

will be displayed, and the system left hanging. To recover, press [RESET] (and type [3][D][O][G][RETURN] if you are in monitor "***"), re-insert the SYSTEM diskette in drive 1, type: [R][U][N], press [RETURN], and try again.

When you choose (2) or (3), a "20-line" display will appear showing each of the twenty possible lines in the spelling unit, and the lines' contents. Words which appear in "normal" (white on black) type are background text, while words in "inverse" (black on white) type are spelling words.

Enter or edit each line by typing in its number. An arrow will then replace the line number and a cursor will appear. Typing on the keyboard produces lower case letters. **Upper case letters are produced by pressing [ESC] before typing the letter.** Thus, type [T] for 't' and [ESC][T] for 'T'.

Identify words as spelling words by typing [SHIFT][M] first. The [SHIFT][M] is not displayed, but the word will appear in inverse. Spelling words are automatically terminated by a space character or the end of a line. If a spelling word ends with a punctuation mark (period, comma, etc.) instead of a space, the punctuation will appear as part of the spelling word. However, the learning routine will correctly identify the punctuation, and remove it from the word. Unfortunately, if two punctuation characters trail the spelling word, only one will be removed! Any doubts as to the display of punctuation used with spelling words can be cleared up when the unit is tested through the learning routines.

A few other keys serve useful purposes when entering unit data. Both of the arrow keys ([←] and [→]) will move the cursor without changing the data in the line. The [RETURN] key will enter the line up to, but not including, the cursor and ask for another line number. [CTRL][X] will restore the line currently being edited to its form before the current edit was made.

Once the unit displayed is satisfactory, entering '00' (double zero) will copy the unit to disk. If the unit already existed on the disk, the system first asks if the file is to be re-written since not all modifications are improvements.

NOTE: The file building routines and the DATA disk sequencing routines operate independently. Because of this, if additional units are added to a DATA disk which is already entered in the disk sequence, the learning routines will **not** recognize the new unit(s). To use the new units, the DATA disk must be re-added to the system using the DATA disk sequencing routines. **It is also essential that the DATA disk sequence be re-edited so that it remains unchanged from its earlier form** (except for the additional units). Also, since the progress index is computed using the "distance" between the original and current locations (as opposed to the actual number of units completed), placing additional units into the sequence can increase some learners' indices erroneously. A safe solution is to reset the index to zero before adding any units to the sequence. This is described fully in the LEARNER RECORDS section, under numbers 1-4.

(4) USE LEARNING SYSTEM

This fourth selection from the USER SYSTEM menu is equivalent to re-booting the diskette. Depending upon the mode setting, it will enter either the learning or demonstration routines.

=====

(0) EXIT COMPU-SPELL SYSTEMS

One should always use this exit from the user systems. This will insure that all data entered was properly incorporated into the system's files.

IV. THE INSTRUCTIONAL MODEL

Assumptions:

In selecting the model for this system, we have made several assumptions which at first glance may seem to fly in the face of common belief about the learning of spelling:

(1) Spelling is **memorization**.

Most teachers would hold that the best teaching of spelling is done by an algorithmic (rule-generating) strategy.

While such a strategy may in fact be the most desirable from the perspective of the **teacher**, we would maintain that it is not the strategy most frequently employed by the **learner**.

Rather, the learner tends to utilize one, (and only one) method for improving his performance — rote memorization.

(2) Spelling is a **writing** task.

Typically, the test for spelling knowledge has been the traditional Friday morning spelling test — one in which the teacher administers the test by saying each word, and then having learners write their responses.

Yet, if the spelling task is analyzed, it soon becomes apparent that the predominant required behavior is **writing** given words, correctly spelled, within the context of surrounding words.

(3) Performance behavior and learning behavior should parallel each other.

If our second assumption is indeed correct, then it should also follow that the best way to elicit a correct written response is by a written (or printed) behavioral demand made of the learner.

(4) Attention should be directed to Maintenance Learning.

Learning psychologists have identified three distinct levels of memory:

(a.) **Register Memory:** This is the kind of memory which comes into play when a phone number is found, dialed, and then immediately forgotten. This process represents a highly transient, temporary storage of data within the brain.

(b.) **Short-Term Memory:** Most typically used by all students in cramming for an exam, a single performance tends to eradicate this memory almost immediately after the desired response is elicited.

(c.) **Long-Term Memory:** In this category are found those facts, conceptual constructs, and visual memories which are accessible years after their acquisition.

However distasteful it may be, the truth of the matter is that many efforts at instruction result in short-term memory storage of desired behaviors. Conversely, the goal of instruction is to imprint long term memory of the taught materials.

Implications:

Since spelling is assumed to be a memory task, we have made no attempt to foster algorithmic structure in the learner's perception of the word groups to be learned. To the contrary, given the vagaries, ambiguities, and inconsistencies of standard English, it would be counterproductive to ask the learner to develop such structures.

Since the premise of the instructional argument is that spelling is a written task, the computer serves admirably to make spelling knowledge testing consonant with this expectation. Blank screen display after presentation of a desired word requires the learner to type the correctly spelled word. The computer is the only truly interactive medium available in the

classroom setting to control and monitor the presentation of words in this way. Moreover, the computer provides the learner immediate feedback about the accuracy of his response.

Precise behavioral shaping is accomplished by making it impossible for the learner to be presented with incorrect reinforcements. Since learners are equally likely to remember one stimulus as any other, the only prevention against incorrect memorization is by **not** presenting incorrect stimulus.

A known parameter for storing long-term memory is over-practice after new learning. Over-practice is accomplished through utilizing post testing (**Spell 2**) routines which immediately follow learning routines (**Spell 1**). Since recall of the word itself is required by the specific display, learners may find it necessary to repeat the post test a number of times simply to memorize the desired sequence of words. The user has control over both the presentation mode and the performance criterion imposed upon learners. Thus, the user becomes, in effect, a learning manager rather than a disseminator of information or a recorder of performance.

V. ERROR MESSAGES/ERROR CODES

Due to the complexity of the COMPU-SPELL system, and the high-resolution character routines, the user may encounter error messages which differ from those normally produced by APPLESOFT.

You may encounter the error:

**** SYSTEM ERROR: LEVEL NOT AVAILABLE**

For an explanation, read carefully the discussion on DATA disks and the DATA disk sequence contained in the "System Options" section under III. PROCEDURES/USER SYSTEM.

If you encounter an error code similar to this:

**** ERROR ****
ERR CODE: nnn
LINE #: nnnnn

Contact Edu-Ware's Service Representative during regular business hours at (213) 706-0661.

NOTES:





Now that you have purchased your EDU-WARE, you may wish to receive a catalog and information about updates and new releases. If so, fill out this card and drop it in the mail. (The information which you supply will help us in our market research.)

PRODUCT NAME _____

VERSION # (displayed when you boot your disk) _____

YOUR NAME _____

STREET ADDRESS _____

CITY _____

STATE _____

ZIP _____

PHONE # _____

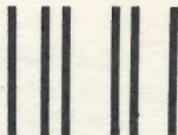
How did you hear about this product? _____

Are you the end-user? Yes No

Your Age? -17 18-25 26-35 36-45 46-55 55-

Comments? _____

EDUWARE[®]
The Science of Learning [™]



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IN THE
UNITED STATES

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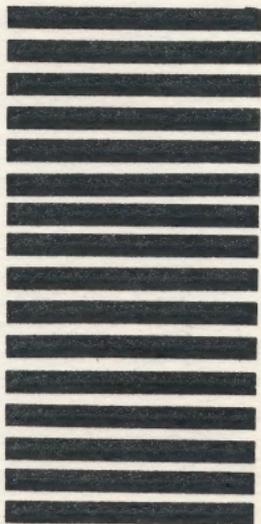
FIRST CLASS

PERMIT NO. 4

AGOURA, CA

POSTAGE WILL BE PAID BY ADDRESSEE

Customer Support
Edu-Ware Services, Inc.
P.O. Box 22222
Agoura, CA 91301



PROBLEMS?

Edu-Ware is firmly committed to supporting the users of its products. This support consists of a 30-day limited warranty, followed by unlimited low-cost service and updates. Note that the Edu-Ware Warranty applies equally to both "glitches" (bad media problems) and "bugs" (program errors).

Regardless of the nature of your problem, we would ask you to use the form on the back of this page in addressing our Service Department. In the event that charges are in order, please accompany your service request with a check or money order, otherwise your return shipment will be sent via U.P.S., C.O.D. Please note that in all cases, you must include your original serialized program diskette as proof of purchase. (However, we normally replace it with a fresh diskette.)

IMPORTANT NOTE:

Many program errors are the result of a defective disk drive, and not program "bugs" or "glitches." Whenever you experience software trouble, you should compare the results of the various commercial software packages you may own. If you consistently find trouble, consult your computer dealer.

EDU-WARE 30-DAY LIMITED WARRANTY

Edu-Ware Services, Inc. warrants this software package to operate within all specifications contained in its accompanying documentation. Should this package fail to meet its specifications within 30 days of purchase by the end user, Edu-Ware Services, Inc. will, at its sole discretion:

1. Correct the failure, by replacement of the defective or error-laden media, upon receipt of the defective program diskette, proof of purchase date, and written description of the problem.

-OR-

2. Refund the original purchase price, upon receipt of the defective program, documentation and accompanying materials.

This warranty is null and void in cases where the user has attempted to make modifications in the program, physically damaged the program diskette, or obtained the product through an unauthorized or illegal distribution channel.

Edu-Ware Services, Inc. will assume no responsibility for the suitability of its products to the user's application. The purchaser must assume a responsibility for the suitability of the application. EduWare Services, Inc. reserves the right to make improvements in its products at anytime without notice, and to replace any defective products with improved versions.

Incidental and consequential damages caused by the malfunction, defect or otherwise, and with respect to the breach of any expressed or implied warranty are not the responsibility of Edu-Ware Services, Inc., and to the extent permitted by law, are hereby excluded both for property damage, and to the extent not unconscionable, for personal injury damage. Some states do not allow the exclusion of incidental or consequential damages, so the above may not apply to all users.

SERVICE REQUEST FORM
EDU-WARE SERVICES, INC.

P.O. Box 22222
 Agoura, Ca. 91301

Product: _____ Media: _____

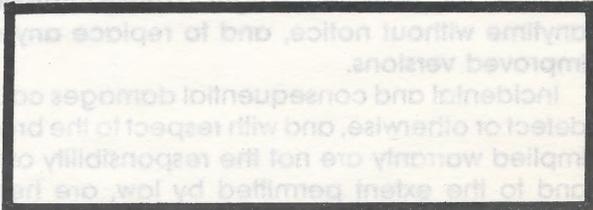
System: _____

SERVICE	AMOUNT	AMOUNT ENCLOSED
Warranty Service	(no charge)	
Defective Media/Update	\$5.00	
Shipping	\$2.00 unless covered by warranty	
5. TOTAL (enclose check or C.O.D. charges will be added)		

6. DESCRIPTION OF PROBLEM (Be as complete as possible. Use separate sheets if necessary. If applicable, be sure to specifically describe the operation you were performing when the failure occurred.)

7. Purchased From: _____ 8. Date: _____

9. Please use this space for your address. It will be used as a mailing label (include zip code).



10. TELEPHONE #:
 () _____