

# Guidelines for Software Evaluation

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As software becomes available for use in rehabilitative audiology, professionals need to make informed decisions as to which programs are well written, best suited to their needs, and cost effective. This paper presents guidelines that can be used to evaluate software prior to its purchase. Suggestions are proposed for reviewing program objectives, instruction manuals and design. Also, consumer concerns, cost evaluation and additional sources of information are discussed.

With the increased use of computers in the field of communication sciences and disorders, software programs that have applicability to rehabilitative audiology are appearing on the market. As more programs become available, it is important that clinicians make knowledgeable choices when purchasing software. If there are three suitable data base management programs from which to choose which is the best? If only one program is available for sign language training, is it worth purchasing? These and similar questions need to be answered by professionals as software consumers. This article presents guidelines for the evaluation of software.

## PROGRAM OBJECTIVE

The initial step in reviewing software is to examine the objective or purpose of that software (Rushakoff, 1984). The objective of the program should be clearly stated. This stated objective can then be analyzed as to whether it would be of benefit to potential program users. For example, a program that stores and prints a file of mailing labels may sound useful and appealing; however, if the potential purchaser has never done a bulk mailing and never plans to do one, the program will be of little benefit. Although it is easy to be impressed by the cleverness of a program, serious consideration must be given to its usefulness. Once it has been determined that the program objective is of benefit, the reviewer should examine whether evidence is available that demonstrates the program does in fact accomplish its objective. The type and amount of evidence required depends on the nature of the program. For

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example, if the program is designed to maintain a hearing aid inventory, it is easy to determine if the program meets this objective. In contrast, a program designed for auditory training with hearing-impaired children should have available data that demonstrate the program is effective in the auditory training of children.

### **PROGRAM MANUAL**

After the program objective has been evaluated, a logical second step is to review the instruction manual that accompanies the program (Freifeld & Engelmayer, 1983; Edwards, 1983). In reviewing the instruction manual the nature of the program must be kept in mind. If the program is drill and practice for phonetic transcription, a brief explanation of the program operation may suffice. Programs for word processing, data base management, and similar purposes require more comprehensive manuals. In evaluating the manual determine if it is clear and easy to read. Does it have a table of contents, an index, a troubleshooting guide, and a section of instruction that walks the user through the program and shows what will be seen on the screen? The manual also should specify any additional hardware or peripherals needed to use the program. Some programs require the use of two disk drives, a printer, or a speech synthesizer. If these additional items must be purchased in order to use the program, the buyer should know this prior to ordering the software. Finally, the program manual should include a telephone number to call for additional information; a number other than the store at which the program was purchased (Freifeld & Engelmayer, 1983). Although the publisher's address is important, if the user is in the process of setting up a data base and runs into difficulty, waiting three weeks for the exchange of written correspondence is neither as efficient, nor as satisfying, as immediate telephone contact.

### **PROGRAM DESIGN**

The evaluation of the actual design of the software is a critical step in its review. Most programmers care more about how much a program can do than the ease of its use. A program should be designed to minimize the amount of time required to learn to use it (Lemmons & Robertson, 1983). This concept of easy to use has been termed "user friendly." Although "user friendly" claims are frequent, it is difficult to create such programs (Edwards, 1983). User friendliness can be assessed by evaluating a number of program characteristics. Is the program easy to enter; is it a turnkey program? Turnkey programs are operational when the user puts the disk into the disk drive and turns on the computer. The user is not faced with a blank screen and a blinking cursor. User friendly programs are also easy to exit. The user should be able to exit a program at almost any time without losing scores or data. Programs which require the user to complete long series of data entries

before exiting can be time consuming to utilize. Instructions on the screen must be easy to understand and follow. Evaluate this from both clinician and client viewpoints. Instructions that are clear to clinicians may not be understandable to aphasic adults or to young children. Complex programs, such as spread sheet or word processing programs, are easier to use when they have troubleshooting guides in the form of HELP screens built into the program. User friendly programs are also menu-driven. Such programs present options to users in a menu format rather than requiring users to type in lengthy commands. Menus should be presented in a multiple-choice format to minimize user errors. If the program is designed for data storage and retrieval, data entry should be relatively simple with allowances for easy correction of errors that may be made during data entry. Data retrieval options should include output to the screen as well as to a printer. Lastly, easy to use programs allow for human error. If a menu presents choices numbered 1, 2, and 3 and the user accidentally presses 4, the program should catch that error (error-trapping) and give the user the chance to re-enter a correct choice without jeopardizing continuation of the program.

Consistency is another important aspect to consider when evaluating the design of programs (Edwards, 1983). A program should be completely consistent in menu displays, warnings, keystroke assignments, and other commands for the user to learn to operate and be comfortable with it. For example, in a certain program the command Q might be used to ask for a HELP screen, but if in a submenu of that program the command Q suddenly causes the user to quit the program, the user will be hesitant to ever use that command.

Well designed programs also take full advantage of the assets of the computer (Lemmons & Robertson, 1983). Programs should make effective use of the screen, graphics, and sound. Screens which are overcrowded with information may cause user errors and are difficult to view for any length of time. Graphics and sound may not be important considerations for a data base program, but they are particularly relevant in computer assisted instruction and in programs for client use. Good programs are interactive in nature. A program that requires the clinician or client to read long passages of text from the screen is not utilizing the computer's powerful capability to interact with the user.

### CONSUMER CONCERNS

As programs are reviewed, buyers must not hesitate to ask the same questions that would be asked when purchasing any major item for home or office (Freifeld & Engelmayer, 1983). Does the program have a reasonable warranty? Although most programs have extremely limited warranties, the publisher should agree to replace a program that will not operate after its purchase. Can the program be previewed? Generally, widely marketed

programs can be previewed at local computer stores. Programs designed for communication sciences and disorders, however, are usually available only through catalogs, thus previewing becomes difficult. It is important to clarify the preview policy since a publisher may not allow its software to be returned. A return policy is particularly critical if a program is being purchased through a catalog without a preview option. If a program is purchased for use with adult clients, but on receipt seems to be suitable only for young children, a return option becomes extremely valuable. Is a demonstration disk available? For a nominal fee, many publishers now have available demonstration disks that contain a sample of the program. These disks allow potential users to determine if the software is appropriate for their needs prior to purchasing the entire program. With some programs, the cost of the demonstration disk can be applied to the purchase price of the entire program. Is the program copyable or is a back-up disk provided? On occasion disks are destroyed by malfunctioning disk drives or by other unexpected hazards and a second copy of the disk is a necessity. Although some publishers assure that replacement disks are available by mail, such a delay may be an important consideration with frequently used programs. Finally, since improvements and updating of programs are frequent, the option to obtain these revisions at reduced rates is an important consideration for potential users.

#### **PROGRAM COST**

After a program's purpose, instruction manual, and design have been reviewed and the publisher's warranty, return and replacement policies examined, a reasonable judgement can be made regarding the program cost. Buyers also must consider whether the program will be used frequently by a number of staff and/or if the program can save users a significant amount of time and money. Programs that will be used only on rare occasions by a limited number of staff may not be cost effective even if they are excellent programs.

#### **INFORMATION SOURCES**

If, after its review, potential program users are still uncertain whether to purchase it, several sources are available for additional information (Hession & Rubel, 1984). As previously stated, dealer demonstrations provide opportunities to preview and use programs prior to purchase. Widely marketed programs often are available at local computer stores, however, these stores may have a limited selection of programs and sales people may not be thoroughly familiar with all of them. Demonstrations at professional conferences provide an excellent opportunity to view and compare programs. Discussions with colleagues to determine their success with a program can be beneficial, but it is important to remember that one individual's needs may be

very different from another's. Finally, software reviews in computer magazines, and soon to be included in *ASHA* (1984), can provide helpful information and allow for comparisons among programs.

### CONCLUSION

As computers continue to be utilized in audiology and as additional software becomes available, it is critical that professionals become knowledgeable consumers in the software market. Increasing budgetary constraints will force individuals to make difficult decisions when choosing programs. Guidelines for software evaluation such as those presented in this paper should be used to ensure that programs are well written, suited to users' needs, and cost effective prior to their purchase.

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