

5 chapter

Software Selection and Criteria

"At the clubhouse, young people become designers and creators—not just consumers—of computer-based products. Participants use leading-edge software to create their own artwork, animations, simulations, multimedia presentations, virtual worlds, musical creations, Web sites, and robotic constructions."

*Mitch Resnick
LEGO/Papert Professor of Learning Research, MIT Media Lab*

Introduction

Having come to agreement about the intended programmatic focus of the CTC, the Steering Committee's next task is to determine what software is required, and plan for hardware acquisition. If the Center Director or Coordinator has been identified, he or she should be involved directly in the process of software planning or, in some cases, the task can be delegated entirely to the Center Director or Coordinator.

Software selection is not an easy task but selections should always be reflective of the CTC mission; software that does not help your CTC achieve its mission should be avoided. The quantity of commercially available software titles is vast and grows every day. Even fifteen years ago, it was estimated that, in the field of educational software alone, there were more than ten thousand current titles. Thus any comprehensive review is beyond the bounds of this manual. While specific titles are referenced as typifying certain kinds of software, no guarantee is made that any software cited is still in commercial circulation nor that it represents the best of its specific type.

The Basic Package

Regardless of its size, constituency, programmatic goals, hardware configuration, or budget, every CTC must make certain kinds of software available to its participants. These fundamental computing tools are:

- word processing and desktop publishing
- spreadsheets
- databases
- graphics
- Internet browsers
- slide show or presentation software
- email programs and services
- software to build homepages
- software to read or play special files (pdf, mp3, ram, wav, mov)

Variously referred to as “productivity tools”, “applications software”, or “business applications”, such software forms the building blocks of computer comfort and skill. They are also referred to as office software as these are the most common computer applications used in a workplace. In fact, much of the existing commercial software library has been created using combinations and permutations of these tools. Creative teachers and instructors can find ways to use these tools in the service of many disparate objectives such as adult literacy, job training and job-seeking, pre-school education, homework help, virtual travel, group projects, etc.

Some General Considerations

1. Hardware connections?

Knowing that your center must have this basic software set means facing up to some hardware issues. It's not clear whether increased memory in hardware is driving software configurations or vice versa, but the fact of the matter is that the more recent the productivity tool software package, the more memory it requires on a computer hard drive or server. Most software packages will list the minimum memory and hardware requirements to run the software properly; be sure to check these requirements before a purchase.

If the center contemplates serious desktop publishing, it will be necessary to have additional hardware that can scan images (scanners) or even develop snapshots as digital images by connecting the camera directly with the computer.

If sound (music, audio help, sound effects, etc.) is a feature of center software, participants will need earphones connected to the hardware system.

For fast, efficient use of the world wide web (WWW) and other communications tools requiring transmission and reception of graphic images, either high speed modems are needed to enable computers to communicate over standard analog telephone connections or other, more expensive, adapters must be acquired to enable the use of special phone line switching arrangements (e.g., ISDN) or special communications lines (e.g., T-1, frame relay).

Centers using older equipment can still do very well with older versions of many software productivity tools. The processes are generally the same and older versions, without so many bells and whistles, are often easier to learn to use than newer, more gimmick-laden versions.

Centers need to know that their software goals will affect their hardware choices, and vice versa. For example, a CTC's decision to use a server rather than stand-alone machines may determine what version of a particular package the center must acquire. For those whose hardware capability has been predetermined by circumstance (such as a donation from a company that is upgrading), they will need to keep firmly in mind the memory capacity and other hardware system limitations when choosing software packages.

2. Bundled or separate packages?

Several companies sell a "bundled" package of these productivity tools. Some popular bundles you may have heard of are Microsoft Office, AppleWorks, Star Office, Open Office, and 602 Office. Similarly, hardware systems often come "bundled" or preloaded with a variety of software packages.

Alternatively, there are single packages that contain a variety of software tools. AppleWorks, for example, is a single program that includes a word processor, a spreadsheet, a database, graphics tools and a graphics library, and communications software. This latter type of package has much to offer a CTC: procedures, menus, keystroke shortcuts are common to all the applications. Furthermore, it is easy to clip from one application and use that clip in another. The disadvantage, that no one program has all the features of a full-fledged stand-alone package, may, in the case of a CTC, also be an advantage for learners who don't need to start out using so many options.

The availability of software donations or other circumstances may result in a center having separate packages produced by different companies. In most cases, it will still be possible to "clip" from one and "insert" in another, but the procedure may not be either direct or easy.

3. *Level of sophistication?*

It is important not to underestimate the ability of participants to learn sophisticated and complex programs. Early in the development of educational software, it was thought that children would need highly simplified and watered down versions of productivity tools. Now everyone knows that kids can perform complicated tasks that many adults shy away from (e.g., programming a VCR!) and are likely to be able to master complex software much more readily than their elders.

Because participants at a CTC may be ignorant—of computers, of reading or writing, of the English language—it does not follow inexorably that they cannot learn complex or sophisticated processes. It is, therefore, not necessary to find programs that are easy to learn. It is important that the programs be easy to use. For example, in an early version of WordPerfect, four keys had to be simultaneously depressed in order to mark off a block of text—a fairly routine and commonly used function. The outcry from users was intense, and the developers responded with a far simpler procedure for later versions. In asking around, find people who use a particular program. Find out if they think it is easy to use. Pay less attention to instructors in commercial training programs (or teachers in schools) who may tell you that a program is easy to learn.

This all may seem at variance with the preceding section where the suggestion was made that a package of several applications but lacking some of the features of a stand-alone application could be an advantage in a CTC. Not so. The example cited, AppleWorks, is a fully professional set of programs, as are others of its genre. That the multiplicity of functions is somewhat less than those included with, say, the latest version of Microsoft Word, will not be of prime importance to the majority of users.

Nor is it the case that all applications designed for children are inappropriate for adults or for general usage. For example, KidPix, a drawing and painting program designed as per its name for kids, is an excellent general purpose introductory graphics program. Many sophisticated features of higher end graphics programs are included, and additional features, designed to make using the program “fun” for kids, also make it fun for adults.

4. *Language?*

Many CTCs will confront the issue of language. With a participant population that is predominantly Spanish speaking, or Haitian-Creole speaking, or Korean speaking, would it not be important to have these fundamental productivity tools with text in their own languages?

The resounding consensus among CTCNet affiliates who have confronted this issue is NO! Their other-language speaking participants have indicated an overwhelming preference for learning to use productivity tools with English menus. They feel, understandably, that the English menus will better prepare them to use these in the workplace. On the other hand, many have indicated that it would be nice to have some more recreational types of software available in their own languages.

There is a piece of “shareware” that can assist other-than-English speakers and writers in including correct accent marks for communications in their own languages. Called PopChar, it will display all available accented letters. The required accented letter will appear in the text when the user clicks on the PopChar image. Doubtless there are a variety of similar products. For additional information on PopChar, head to: www.unissoftwareplus.com/products/popchar

5. *Teaching aids?*

Introductory On-Screen Tours: Some hardware packages include introductory tours with the system software; likewise, some productivity tools also provide such introductory material. Some are good; some are not. The Introduction to the Macintosh that used to come with the purchase of a Macintosh computer was excellent. Hands-on examples were built in. The text was simple and enhanced with graphical representation of the keyboard and other needed peripherals. The “try-it-yourself sections” were fun and instructive and the feedback for incorrect keystrokes was kind and encouraging.

Manuals and Other Texts: Not only do manuals accompany most software packages, but books and books of explanatory text have been written for many of the more popular software applications. While it is good to have these texts available in a CTC “library”, they are not the best learning tools for beginners, particularly those who have low reading skills. Standard practice in a CTCNet affiliate is to ask participants to come in with some project they would like to accomplish and to learn the appropriate computer tools in the context of that project, assisted by instructors or other learners.

On-screen “Help”: Although most programs provide “on-screen” help, using this capability has many drawbacks. First, it is often difficult to find the section of the help that deals with the specific problem the user is encountering. Second, of course, is the reading problem - lots of text. Lastly, some on-screen help is limited to lists of keystroke equivalents to menu items. For all three reasons, CTC participants may be more frustrated than assisted by on-screen help.

Audio Tapes: Audio tapes have the following advantages: 1) the equipment needed (a “Walkman” or equivalent tape player with earphones) is inexpensive

(and many participants will actually own their own); 2) the participant can start, stop, rewind, or fast forward the tape at will; 3) since the user has ear phones, other participants are not bothered; 4) progress through the tutorial is entirely self-paced by the participant; and 5) the participant has little need to oscillate between teaching medium and keyboarding. He or she can keep hands on the keyboard at all times. Most computers also come equipped with CD-ROM drives. The disadvantages are only that a tape cannot answer randomly posed questions and that most instructional material of this sort requires that the user follow a set sequence rather than pursuing a personal project. As such, it is advisable to have a follow-up discussion after the participant finishes the material to answer any questions and foster comprehension of the material.

Video Tapes: Popular, but not effective, video tapes require that the participant constantly shift between the viewing screen and the computer screen. Unless earphones are available, the tape's audio can be distracting to others (as can the video). It is more difficult for a user to stop, restart, or rewind a video tape. The temptation to use video tapes with groups of people counteracts the individualization of learning progress. And of course video tapes have the same disadvantages of audio tapes (see above).

CD-ROMs and DVDs: Many new computers come equipped with drives that play CD-ROMs and/or DVDs. Prices for DVDs are similar to videotapes yet require equipment you probably already have on hand, namely a computer and headphones or speakers. The benefits of using DVDs and CD-ROMs are similar to those of audio tapes and videotapes, but they allow for interaction with the participant.

CD-R & DVD-R: CTCs can use the very simple tools at their disposal to create their own teaching aids and curriculum for participants. Many new computers will come with, or include the option for, what are commonly referred to as CD and/or DVD burners or writers. Essentially another disk drive on the computer, this hardware allows you to place your own files and videos onto a CD or DVD. Ideal peripherals you may want handy include a microphone, digital camera, scanner, and DVD video camera. Creating such materials will be labor-intensive but may be especially appealing as special projects offered to participants, volunteers, interns, etc.

People: The very best learning aid is other people: an instructor or volunteer, a tutor, a peer, a young person or a senior—anyone who can offer personalized assistance when that assistance is needed. In addition, getting one person excited about learning tends to have a beneficial domino effect on other participants to want to learn similar material. For example, if a child creates a web page and shows that page to friends, more than likely you will have an eager group of would-be web developers at your disposal.

Extending the Basic Package

Determining factors

Budget, number of computer stations, and hours of operation will, in part, determine how much additional software is needed for the CTC. The most important determining factor, however, will be the wants and needs of the participating population. In order better to ascertain these needs and wants, the CTC should start off with a modest amount of additional software in a variety of categories. In choosing this first “extension of the basic package,” it will be important to look for the most versatile packages and those that have appeal to a wide range of ages and individual needs. CTCNet choices for an initial selection are marked with an asterisk (*) below.

As the participating population becomes familiar with the software available, they should be able to be more specific about other titles in other areas that they would like to see represented in the CTC library.

Software for first time users

It is particularly important to have software on hand that can be used successfully by participants who are sitting at a computer for the very first time. The following have been successful over time in a variety of CTCNet centers with a variety of ages and ability levels:

Print Shop/ Desktop Publishing (or equivalent): Enables the user to produce a greeting card, flyer, letterhead sample, banner, and, in some versions, a personalized calendar. Ideal for a first time user of any age since a product can be designed, produced, printed, and taken home usually within the first half or full hour of use. Children enjoy making cards as an introduction to the computer to give to a parent, teacher, friend, etc. Once they learn to master this skill it may have an adverse effect on your printing budget, so be sure to specify your printing policy to participants.

Solitaire: Familiar to many users already, Solitaire (or Canfield) may even be included as part of the operating system of many computers. Because of existing familiarity with the game, this is an excellent and usually enjoyable way to get participants used to controlling the mouse, dragging and clicking, and other such very basic computer comfort skills.

Screen Savers: These programs are designed to protect computer screen from “burned-in” or shadowed images of text or graphics that have been left on the

screen for too long a period. The program is timed to replace the user's screen with a moving graphic (e.g., swimming fish, flying toasters, rotating designs, etc) until any key is pressed. Choosing a screen saver graphic is a matter of personal taste, but the best of these programs allow you to create your own pattern, and many CTCNet centers have individualized their screen savers with information about the center itself.

Typing Tutors (*Mavis Beacon Teaches Typing or equivalent): Many, if not most, participants will arrive at the CTC without touch typing skills. While CTCNet definitely does NOT subscribe to the oft-cited opinion that touch-typing is a prerequisite for computer use, we have found that people lacking these skills soon ask if such a tutor is available. The computer is an infinitely patient drill-master, and most typing programs are "jazzed up" with graphically-based speed drills that make learning much more fun than it used to be at a manual typewriter. It is important, even necessary, to make a typing-tutor program available. Look for one that introduces finger placement graphically, that offers constructive feedback (special keys to work on) and automatically provides drill appropriate to the user's skill development. Be sure, too, that game-type speed and accuracy test formats are non-violent and free of gender or ethnic stereotypes.

Design-A-Blank Kits: The blank can stand for -a-room, -a-house, -a-game, -a-garden, -a-car, -a-plane, -a-dress, -a-toy - whatever; all these and more are available. The idea springs from graphics and allows people to indulge in wishful and/or practical thinking, also gaining experience with the particular subject area covered by the program. The better ones include the capability for 3-D viewing and/or "virtual" testing, and many provide for printing out groundplans or patterns or "blueprints" that can be turned into paper models.

Construction kits (Music Construction Kit, Pinball Construction Kit, *The Incredible Machine, or similar): Similar to design kits, these programs allow the user to construct a mechanism or a piece of music and then play it or make it run in a virtual environment. Excellent for group activity and for a variety of ages and interests, most contain examples as well as challenges, and all stimulate creativity.

N.B. Special purpose packages such as label makers, business card creators, a calendar-maker, and such may seem useful additions to a CTC library, but in fact would be a waste of money since any such application can quite easily be created using a wordprocessor or desktop publishing program. And learning to use a wordprocessor for these sorts of applications broadens the experience and skill of center participants.

Digital Music Mixing: The following description of digital music mixing software was contributed by Andrew Sears of the Association of Christian Commu-

nity Computing Centers (or AC4, on the web at <http://www.ac4.org>).

“One thing we’ve noticed at our computer center is that most urban youth are into music. To help make technology attractive, we’ve been having a lot of our youth work on mixing music digitally, and it has been one of the most successful things we’ve done. In fact, we find that most of our youth are more interested in mixing music than even using the web. Both programs we use, allow youth to take thousands of prerecorded tracks of drum beats, guitars, vocals, bass, etc and mix them into their own songs. We then have a CD burner that we let them use (after buying a CD from us for \$2) to make their own CD to take home. We’ve had a lot of kids do this, and then they show their friends their CD, and then their friends start coming in.

“The two main programs that we use at our center are:

“1. Hip Hop eJay II. Very easy to use and looks attractive. This program requires the CD to run (but you can share it across a network as described below). Cost is \$39.95, and you can try to get a donation from them for up to 6 copies by sending a request on letterhead. You must be a non-profit social service organization. Their Web site is <http://www.voyetra.com> Seth Dotterer Voyetra Turtle Beach, Inc. 5 Odell Plaza Yonkers, NY 10701

“2. Acid Music Hip Hop. A little more advanced and not as easy to use, but you can do more with this and they also have more professional tools that can integrate with it. You can get it at shopping.yahoo.com for \$39.95, and the company’s Web site is <http://www.sonicfoundry.com> They also give donations to some community based organizations.

“If you want to share one of these CD’s across a network (or other CD’s) you can purchase Virtual Drive from Farstone (<http://www.farstone.com>). This allows you to put an image of a CD on a server and share it across the network so you don’t have to keep handing out CD’s (and get them scratched).”

“Educational” software

Software is no substitute for education. School subject related drill and practice programs are not part of CTCNet’s recommended purchase strategy. Most applications are quite narrow, multiple choice dominates over original input, and the content is determined by traditional school curriculum. We see CTCs as providing opportunities for all ages to encounter computer applications that complement and enrich learning activities, thus enhancing self-esteem.

In recent years, developers of educational software have produced more of the open-ended variety where student input can be creative and individual. Unfortu-

nately, the best of these packages also require a teacher well grounded in using them, often making them the centerpieces of month-long class projects. For the most part, these programs are not suitable for use in a CTC due to staff time and limitations of expertise.

With these caveats in mind, it is still possible to make recommendations of off-the-shelf software that has educational value.

Preschool packages: For parent/child sessions, excellent choices include simple learning games for colors, letters, numbers/quantities, time-telling, and concepts such as high/low, inside/outside, large/small, above/below, etc. There should be sufficient variety so that a child can return to the program happily time after time, still deriving pleasure and skill from each encounter. For more specific suggestions about software, please see the discussion on Sept 13-14, 2002 at <http://www.ctcnet.org/americaconnects/acc2/index.htm>. And note for example, in that thread, Mercedes Soto's word of caution that those considering use of technology with youngsters under the age of seven should read "Failure to Connect" by Jean Healy, Ph.D.

Simulations: The best known of these is the "Sim-" series: * Sim-City, Sim-Town, Sim-Theme Park, Sim-Earth, Sim-Ant, and more. Other simulation games are available online, such as MUDs, that allow for real-time game playing with users all over the world. Best for grade- and high-school students, the user constructs an environment (a city, a planet-scape, an ant-colony) and the program generates natural reactions to that environment so that the virtual inhabitants either thrive or not according to decisions made by the user together with natural phenomena introduced by the program. Suitable for group participation, most of these programs are excellent learning experiences and participants enjoy them.

Other titles that have received enthusiastic reviews include Three Mile Island (managing a nuclear plant), and The Incredible Laboratory (the care and feeding of alien life forms in a lab environment). There is also a program simulating the fishing industry where participants manage fishing fleets with the almost inevitable result that the supply of fish is totally depleted and the fleet owners go out of business. This program is so well constructed that it has been used at corporate retreats as a market-saturation simulation.

Lastly, *Flight Simulator which puts the user in the pilot's seat of a plane and teaches elements of measurement, physics, and navigation as well as piloting techniques is popular, as are its close relatives that deal with driving a car.

Play Detective (Where in the World is Carmen Sandiego? or equivalent): Many different kinds of programs employ the "you are the detective" strategy. Carmen Sandiego, the prototype, has been so successful that a PBS TV show has been designed around the program concepts.

Take a Trip: Oregon Trail, where the student assumes the role of a pioneer and must plan supplies, devise routes, and collaborate with others in order to survive the western journey, is perhaps the granddaddy of such programs. But today, you can take a trip through the human body, explore the solar system, unearth Mayan ruins, sail with Columbus—all and more. Be sure to check out current software titles from National Geographic and the Magic School Bus series.

Drill & Practice: As noted above under “Typing Tutors”, the computer is a super drill master. The trick is in knowing when drill, or rote learning is advisable. A general rule of thumb consists of asking the question, “Is this knowledge that you want to have without thinking about it?” Touch typing, or keyboarding, is an obvious “Yes”. Foreign language vocabulary, spelling, and math facts are also candidates for drill and practice learning. While there are successful software packages in all these categories (the Math Blaster Series is an outstanding example), children and adults can gain computer experience by developing their own drill and practice programs or aids using wordprocessors and/or spreadsheets.

Integrated Learning Systems (ILS): Comprehensive school curriculum covering a variety of subjects and often a variety of grade levels has been automated for computer use by a number of different companies (Computer Curriculum Company (CCC), US Basics, and Jostens are three of the better known). Designed to be teacher-substitutes, these programs pre-test students and route them accordingly to appropriate exercises. Monitoring and grading are also automated.

It has not generally been in the nature of integrated learning systems to promote exploration and discovery or to enhance a students' ability to master computer applications and turn them to their own uses.

If a CTC is intent on offering an ILS, its staff should:

- Review the system thoroughly, bearing in mind the evaluation criteria given later in this chapter,
- Talk with many teachers (use the Internet) who have used the system over time (not just those suggested by the ILS salespeople), and
- Provide equivalent time in the CTC schedule for students using the ILS to explore and learn to use other broader applications of technology.

Writing and Reading: The best route toward encouraging reading and writing skill development is simple wordprocessing, desktop publishing, email, chat, and ebooks. There are, however, some off-the-counter packages that go a ways toward engaging the interest of children and young people in acquiring or enhancing these skills.

Recreational software

It is difficult to separate “recreational” and “entertainment” software, since the best of either has qualities of the other. A number of the categories described above refer to programs that someone else might characterize as primarily recreational, yet because of their special purpose or educational value, they’ve been described under a different label.

Board and/or Strategy Games: Electronic versions of Othello, Checkers, Monopoly, Chess, Backgammon, Go, Bridge, etc. are good additions to a CTC software library. Often particularly popular with seniors, these provide challenge for those who have trouble finding an appropriately skilled opponent. They also help develop strategy and planning skills. And they don’t cheat! Look for a version that has different levels from beginner to advanced, that offers clear instructions for those new to the game, and where the graphics are not overly fussy (e.g., for card games, the cards must be easy to read).

TV Games: Electronic versions of Wheel of Fortune or Jeopardy are always popular and may have some peripheral educational value in terms of spelling, word sense, and miscellaneous information. Try to find types where users can enter their own challenges for each other.

Adventure Games: Similar to the “Take a Trip” learning games, in these, the user plays the part of a character in a fictional (rather than real life or historical) environment. A quest is usually involved. The most overwhelmingly successful of these is a program called *Myst*, created by the same team who developed *Manhole* (see above). *Myst* has spawned clubs, special interest groups on the Internet, books on strategy, and magazine and newspaper articles. It is relatively non-violent as such games go, is free of ethnic or racial stereotypes, has superb graphics, and is sufficiently complex in terms of its response to user input that it can be played for hours, even days on end (users can “save” their adventure progress to date—a necessary feature for such a complex program).

Eye/Hand Coordination Games: The archetype, Pong, and its successor, Pacman, were among the very first games designed for personal computers. Neither had much to recommend it, apart from being free of ethnic, gender, or racial stereotypes, but they were nevertheless addicting for many. The genre has produced some really horrible examples, dominated by violence and target practice in one form or another, but there is at least one, Tetris, that actually has some value in developing, in addition to eye/hand coordination, concepts of spatial relations. Tetris has the additional value of being available at no cost from a variety of different sources including some online gaming sites.

Reference libraries

The advent of CD-ROM disks has made it possible to purchase entire encyclopedias, almanacs, and atlases in addition to the dictionary and thesaurus capability already mentioned. A judicious selection of these works is a valuable addition to a CTC software library since many of the participants will not own these in book form and students may need them for research. Make sure that any such reference works do not have copyright restrictions.

Museum collections are also available: the Smithsonian, the Louvre, and many of the other world-famous museums have made their collections available pictorially on disk or even from their web sites.

And lastly, clip-art images, sound clips (music and/or sound effects), and font libraries, all of which are useful for desktop publishing and in the creation of web pages are available for purchase or downloadable from the Internet. Such collections may supplement collections that come bundled with other software packages.

Evaluative Criteria

Throughout the previous sections, various criteria have been described in connection with specific packages or software genre. While no single product may meet all of the criteria summarized below, those that succeed in maximizing the positives and avoiding all the negatives are the better choices.

Look for software that...

- Enables users to do something they couldn't otherwise do, or to do things better or more efficiently
- Is multi-purpose and open-ended
- Appeals to a wide range of ages and interests
- Is easy to use (not necessarily easy to learn)

- Offers constructive feedback (both positive and negative)
- Encourages creative, individualized, original input
- Enhances content through electronic presentation (very important)
- Provides instructions or on-screen help that is clear and useful
- Employs tasteful and attractive graphics that are
 - Non-violent
 - Free of gender or ethnic stereotypes
 - Representative of user population (very important)
- Provides a tangible **product**
- Is fun to use and gives users a sense of accomplishment
- Has a clear and fair copyright and licensing agreement

Avoid software that...

- Limits user interaction to pressing return or making a choice between presented options
- Requires simultaneous depression of several keys in order to accomplish a routine or frequently used function
- Has large amounts of text on the screen
- Does not allow the user to control sound levels, timing, or other intrusive features
- Presents content in a violent, racist, sexist, or condescending fashion
- Does not significantly add to a user's knowledge base in a meaningful way
- Is little more than an automated workbook (after all, workbooks are much cheaper and easier to maintain)
- Repeats exaggerated or lengthy graphics displays that have little to do with the advertised "content"

Copyright & Licensing Considerations

Rights:

All commercial software is copyright protected. The purchased package will contain a licensing statement to which the purchaser agrees by the action of opening the package. Consider contacting the vendor if you read this agreement and have any questions. If the CTC is planning to use a local area network (LAN) to deliver software to all of its computers, it will be necessary both to be sure, when purchasing, that the software is compatible with the specific server to be used and also that the licensing agreement accepts LAN use as legal. Alternatively, if the CTC wants the software to be available on each station (without using a server), arrangements can be made for a “site license” or permission to install the software on all the systems of the specified site. Both these sorts of arrangements affect the price paid for the software and accompanying license. If the CTC has connections with business or educational institutions in the community, it may be that those institutions have negotiated site license agreements that can be extended to the CTC.

Because CTCs must obey the law for their own protection and must serve as exemplars for their participants, it is important that they abide by copyright laws. For this reason, CTCNet centers do not allow participants to remove copies of center software in violation of copyright laws, nor, in most cases, do they allow participants to bring their own software into the center. In cases where software has been donated to a center, it is imperative that the donor supply the center with a copy of the licensing agreement together with a transfer of ownership statement.

An advantage of the licensing agreement is that a registered owner (registration cards are also included in the software package) can usually obtain upgrades at far less than the full market price.

Public domain/shareware:

Some software is free and not copyright protected. Usually referred to as “Public Domain Software,” such packages are freely copyable and/or transferable. Other software, called “shareware” is offered freely to one and all through user-groups or over the Internet with the suggested proviso that someone copying or downloading such a program voluntarily send a small amount of money to the creator/developer of the software. Shareware operates on the honor system so CTCs using shareware should be particularly careful to follow the on-screen instructions for remunerating the developer.

Shopping Hints

Start small—supply the basics and a selection of other programs

In choosing the elements of the basic package, it may be advisable, particularly if job preparation is a CTC goal, to ascertain what business applications are in most common usage among potential community employers. On the other hand, developing skill with a particular word processing program will certainly make learning a second one much easier, and this should be true of graphics, or spreadsheets, or databases, or communications software.

When shopping for additions to the basic package, take it slowly, limiting each shopping expedition to one type of program. It will take quite a while just to consider the quantity of board games available, for example.

Be aware of hardware compatibility

Examine each software package carefully, noting the type of hardware, the memory requirements, and the required system software. Determine whether additional peripheral hardware such as speakers, scanners, earphones, etc., will be necessary to make the program perform at its best in your CTC or will require regularly upgrading equipment.

Preview

Many of the criteria listed above require careful examination of software products. Patronize only stores and/or catalog sources that permit you to preview packages. Software vendors often do not permit returns so be sure to road-test evaluation and demo versions of software with CTC participants. Many software companies offer free demos or trial versions of their packages from their web sites. Retail outlets specializing in computer equipment and supplies offer facilities for trying out software and frequently have knowledgeable salespeople who can help. Unless you are certain that you know the exact title and version of the software you are looking for, don't order from a company that doesn't offer this option.

Resources

Catalogs

The minute that you purchase any hardware or software, you will start receiving

catalogs from hardware and software vendors. These make good reading, for center administration and for participants. They list and describe new software titles, titles that give ideas for future purchases, bargains, etc., but give virtually no information about program quality. As per the above “Shopping Hint”, try to make purchases only from vendors that offer a trial period. Then use the trial period to evaluate the purchase.

Use your own experience and that of others whose opinion you value to identify reliable sources. If you’re not receiving catalogs from these sources, write and request them. In the field of educational software, CTCNet has found Sunburst, Tom Snyder Productions, and Broderbund fairly reliable regarding product quality and service.

Other software users

When soliciting opinions regarding software purchases from other users, remember that they may not have the same criteria that you do, they may not have the same purpose in mind, and, most importantly, they may never have worked with a population similar to the participants at a CTC. Preview their recommendations as you would any other product. You will soon discover whether their suggestions are suitable for CTC use.

Magazine, newspaper, and on-line reviews

Magazines devoted to personal computers abound. Often these target a specific type of hardware (e.g., PC or Mac). All include announcements of new products, software reviews, and sometimes “ten best” lists. Again, it is wise to “get to know” your reviewer so that you can more accurately rate his or her opinions in relation to your needs. Newspapers with large urban or regional audiences often have “technology” sections and print software reviews periodically. The same caveats apply as they do to products described on the Internet or World Wide Web.

Center participants

Make catalogs and computer magazines available to your center participants. Solicit their ideas for products to add to the CTC software library. Get them involved in the preview/evaluation work too.

CTCNet

CTCNet’s email lists and other on-line connections facilitate information sharing about software needs and recommendations. Queries from

affiliates have included questions about recreational software in Spanish, “good” learning programs for ESL and Adult Literacy instruction, and recommendations of interesting science software. In each case, the questioner has received lists of suggestions, each coming from a center that has had experience with the specific software titles. For this reason alone, membership in CTCNet would be a valuable asset for any CTC. In addition, archives of the CTCNet-America Connects Consortium (ACC) sponsored online panel focusing on software in CTCs can be accessed from <http://www.ctcnet.org> and from <http://www.americconnects.net>.

Documentation

Planning and acquiring software for the CTC should result in the following:

- An inventory (database) of software including, as applicable: version number, date purchased, date registered, price, number of copies, location in CTC, intended use. It is extremely important to keep this inventory up to date. It will be needed for annual audits, and will serve as part of the orientation of new staff and volunteers.
- A list of any hardware specifications necessitated by intended software use: memory size, LAN, peripherals, phone lines or switching devices, etc.
- Consideration of the types of software needed, such as those in the following checklist:

Standard programs			
	wordprocessing		anti-virus programs
	spreadsheets		databases
	graphics		communications
	typing tutor		greeting card/sign maker
	drawing and painting		screen saver
Software designed for:			
	adult education		pre-school education
	after school activities		job preparation
	job placement		elder services
	electronic commerce		recreation