

Educational Software for Children



By Richard W. Boss

Educational software is computer software the primary purpose of which is teaching or self-learning. This PLA Tech Note does not address all types of educational software. It focuses on that for use in a library or at home, rather than in the classroom or workplace. It also does not discuss software for young adults and adults. The focus is on children, preschool through age 12.

Selecting software for children and promoting its use is a challenge. It is not just a matter of finding software that meets the criteria set by librarians, but also that which children will choose to use. Interviews by the author with a score of randomly selected children's librarians in mid-size public libraries revealed that a minority of the titles that have been favorably reviewed are very popular with children. The children's librarians explained that children tend to choose the software that features characters they recognize from books, videos, or films. When they see familiar icons, they click on them, rather than on the unfamiliar ones.

Name recognition may lead a child to a product, but will not interest him or her very long if it lacks fun, the graphics and/or animation are poor, it is difficult to control minute on-screen movements with a mouse, or there is some other difficulty with use.

The quality of graphics and animation is a particularly important factor in attracting children to an educational software title. In the past 20 years there have been dramatic improvements in this area because of advances in computer hardware and research in children's learning. For a history of educational software during the period of greatest change, see Judi Johnson's "Then, Now and Beyond, A Look at the Past 30 Years of Educational Software," *Learning & Leading With Technology*, vol. 30, no. 7 (2003).

Awareness of Child Development Differences

Children differ in the rate of their development in several different areas. For that reason, any selector of educational software for children should do some background reading in child development; and any selection criteria must be developed and applied not just on the basis of age, but also differences attributable to socio-economic conditions. The major areas of child development are:

- **Physical development**—The development of both gross and fine motor control of the body.
- **Perception and sensory development**—How children function using the senses and their ability to process the information gained.
- **Communication and language development**—Using visual and sound stimuli, especially in the acquisition of languages.
- **Cognitive development**—How children think and react.
- **Emotional development**—Children's increasing awareness and control of their feelings and how they react to these feelings.
- **Social development**—Children's identity, their relationship with others, and understanding their place within a social environment.

Selection Criteria

After examining the selection criteria used by several reviewing media and talking with children's librarians, the author has developed the following composite list of selection criteria:

1. *The title of the program suggests that the program will be fun.*

Children tend to avoid titles that sound educational unless a known and interesting character is featured. Some libraries have increased the use of educational titles with dull names by creating appealing icons that arouse the curiosity of children or adding sub-titles that will appeal.

2. *Getting to the first menu is quick and easy.*

Children are eager for the program to begin and don't want multiple screens of credits and instructions.

3. *For young children, reading ability is not assumed by the software producer.*

Children who cannot yet read—who can be of any age between five and nine—are frustrated when faced with text. The program should be highly intuitive if it targets non-readers.

4. *The program is easy to navigate.*

The program should avoid small and/or complex images that are difficult for young children to navigate with a mouse.

5. *The program avoids gratuitous violence.*

While children are exposed to violence on television, there is no need to purchase software that has gratuitous violence because there are so many good products that are violence-free.

6. *The educational value of the program should not distract from the enjoyment of it.*

While children should learn something or gain a skill, educational programs that are not fun will get only limited use.

7. *The program offers multiple levels or tracks so that children can experience fresh content when returning to the program.*

While young children often like to repeat the same experience, as they grow older the program needs to grow with them. This is especially the case with problem-solving programs.

8. *The program adapts to individual tastes and abilities.*

Given the diversity of our society, the program should assume a wide range of tastes and abilities.

9. *The program is free of gender, racial, ethnic, or religious bias.*

The most common form of bias is stereotyping. Both negative and positive stereotypes are inappropriate. While gender bias is inappropriate, there will be programs that will appeal more to one sex than the other. Programs that will appeal primarily to one sex should be purchased if they do not reflect a bias against the other sex.

10. *Graphics are colorful and appropriate to the content.*

Given the television viewing experience of children, lack of color or poor use of color will shorten the time and frequency of use.

11. *Icons are large and easy to select.*

A significant percentage of children have vision problems. The majority have problems with screens that are cluttered with many icons.

12. *Speech and sound are appropriate to the content.*

Children like speech and sound, but not "noise" that is unrelated to what is happening on the screen.

13. *If appropriate to the content, the program has printing capability.*

Saving the result of a successful effort or printing something to show someone else should be possible.

14. *The program is highly interactive.*

Regular feedback motivates children to continue.

15. *The skills required are appropriate to the ages of the children.*

There is nothing more frustrating for children than to be presented with tasks that they cannot accomplish.

16. *Children can use the program without assistance.*

Children like to be independent of adults when using computer programs, however, some adult assistance should be anticipated for children up to age eight.

17. *Children have control over the order of display.*

Control of the order of display so that it is not the same each time avoids boredom.

18. *Children control the rate of display.*

Not all children respond quickly, therefore, it must be possible to control the rate of display.

19. *It is easy to go back to the previous step.*

It should not be necessary to start over in order to go back to the previous step.

20. *It is easy to get in or out of any activity at any point.*

Children should be able to get out of an activity that is boring and into one they prefer.

21. *Children know when they have made a mistake.*

Error messages should be non-judgmental, even humorous. Nevertheless, it should be clear what mistake has been made.

22. *When a key is held down, only one input goes to the computer.*

Inexperienced users who hold down a key should not be frustrated by a freezing of the screen or an error message.

23. *Pounding on the keyboard does not terminate or freeze the program.*

The program should anticipate pounding on the keyboard by small children and frustrated children.

24. *The available hardware is appropriate to the program.*

The operating system, processor speed, memory, disk space, display type, and sound card requirements are met by the available hardware. Selectors should be fully familiar with the available hardware and should not even consider software that cannot function well on it.

25. *If the software is locally mounted, it is easy to install and maintain.*

It must not be necessary to have a PC technician install and maintain the software. [Although large libraries should have a PC technician on staff and should consider remote PC management]. If the program is hosted by a service provider, it should not require special skills to create the link to it.

26. *The program is a good value for the money.*

A good program can, nevertheless, be too expensive.

Given the importance of “fun” in software programs, it is important to involve children in the selection process. While it is not practical to involve children in the screening of the many hundreds of software programs that become available each year, it is practical to involve them in the final step of selection.

The Steps of Selection

There are four steps in the selection process:

1. an examination of distributors’ and publishers’ announcements
2. a consultation of review media
3. obtaining review copies
4. reviewing of programs

Announcements

Each year there are as many as 1,000 new or revised software programs for children. It is not realistic to obtain review copies or even to read reviews of this many titles. The first cut of up to 90 percent of the titles should be based on the descriptions in the catalogs and announcements. The remaining titles can then be checked in the various reviewing media.

Review Media

The majority of review media target parents or both parents and teachers/librarians. Only some review media involve children in the reviewing, therefore, recommended products may not be popular with children.

Among the reviewing tools that have regularly been used by librarians are the Association of Library Service to Children’s (ALSC) **Notable Computer Software for Children**, **Children’s Technology Review**, **Discovery Education**, **Educational Freeware.com**, and **SuperKids Educational Software Review**.

ALSC Notable Computer Software for Children was for more than a decade one of the best critical reviews sources for children. Unfortunately, the production of the list was discontinued after 2007. Any lists found on the Web are no longer reliable.

Children’s Technology Review (www.childrenstech.com) is a monthly, advertising-free,

review publication of both educational and recreational software and other media. Up to 50 titles suitable for children up to age 15 are reviewed by educators and librarians for each monthly issue. Children are involved in the reviewing of some titles. The archive contains more than 9,000 reviews back to 1985. The subscription is available in PDF form for \$24 and in print form for \$108 a year. Subscribers to the print edition are also given access to the online database.

Discovery Education, a unit of television's Discover Channel

(<http://school.discoveryeducation.com/parents/reviewcorner/>), evaluates several product categories, one of them educational software. The evaluation criteria are posted on the Website. While they are very similar to those mentioned in this Tech Note, the emphasis is on software that appeals to a child's humanitarian qualities. The reviewers are parents and children. Products are rated on a 5-star system, with those rated with a 4.5 or 5.0 star rating receiving an Award of Excellence. The reviews, several hundred in number, are accessible alphabetically, by publisher, and by interest area. There is a link to the Discovery Store, through which software can be purchased.

Educational Freeware.com (www.educational-freeware.com) reviews educational software that is available without charge for K-12. Software for both classroom and home is included, but the majority of the products reviewed are intended for use by teachers.

SuperKids Educational Software Review (www.superkids.com) is only available online. The reviewers are educators, parents, and children. The review database is accessible by new reviews, a subject index, a title index, and a publisher index. The Website includes a sample of the form reviewers are asked to use in their evaluation. The site includes advertising.

For a listing of other educational software reviewing media consult Educational Software Reviews (www.educational-software-directory.net/reviews.html).

Evaluation Copies

Unfortunately, many distributors and publishers are reluctant to provide copies for review because of the cost and/or they fear that the programs may be copied during the review process. Libraries with branches can usually afford to purchase a review copy and order additional copies of the titles they select. Small libraries may lack the financial resources to purchase review copies. They should, therefore, consider forming cooperatives for the purchase of review of children's software. Another option for small libraries is to go to a nearby large public library or school that has an extensive children's software collection. There are also a few state library agencies that obtain copies for evaluation for the benefit of libraries in their states.

Viewing

It is in this step that the participation of children in the selection is highly desirable. Children often react differently to software programs than adults, even adults who regularly work with children. SuperKids Educational Software Review, which uses panels made up of both children and adults, has found that the children often assign much lower

ratings to programs than the adults. Having children review the programs with someone who interacts well with children and who can ask questions about what is liked, what is disliked, and why, may be time consuming, but it may significantly improve the selection process.

Finally, feedback from librarians who work directly with children using children's software should be sought as a way of improving the selection process.

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