Learning Software for Pre-schoolers: Is it Worth Purchasing

By Laurence Wolff and Norma Garcia

The Business of Learning Software

In the first six months of 2001, over 900,000 units of pre-school learning software were sold in the U.S. (out of a total of about 9 million units of educational software). The best sellers, according to NPDintelect, a market tracking firm, include "Blues ABC Times Activity," "Blues Birthday Adventure," "Mickey's Pre-School," "Mickey's Toddler," "Winnie the Pooh," "Adventure Workshop," "Reader Rabbit," and "Jump Start Kindergarten," all of which sold over 50,000 units in the first six months of 2001. Six-month sales were about $15.3 million. [1]

Is It Worth Buying?

Pre-schoolers seem to enjoy a number of these programs and to learn the basics of word and number recognition, logical thinking, and art and drawing. Parents appear to be excited by how quickly even three year olds adapt to the computer.

But do parents get their money's worth? Do pre-schoolers really benefit from these programs? Is computer software, learning and otherwise, good for kids? This seems to be a more controversial question than at first glance. The Alliance for Childhood (www.allianceforchildhood.net) argues that computers can be harmful to children, citing repetitive stress injuries, obesity, eyestrain and even long-term physical, emotional and intellectual damage. Advocates argue that computers may induce children to become socially isolated at an age where social interaction is crucial for the development of lifelong skills like the ability to organize thoughts, find solutions, and communicate with others. According the Alliance's recent "Call to Action," for some, the computer, like the TV, is becoming a "mesmerizing babysitter" for children. [2]

A more balanced approach emphasizes the importance of "developmentally appropriate software." For example, according to Susan Haugland, president of the KIDS project, (www.childrenandcomputers.com) "every criticism launched regarding children's computer use is true if computers are used in non-developmentally appropriate ways." Children exposed to developmental software have significant learning gains and children exposed to non-developmental software had none of these gains and showed significant losses in their level of creativity, up to 50 percent.[3] Computers are merely a tool or resource and their benefits or harmful effects depend on the way they are used. Learning software should be used in conjunction with other traditional learning tools and the importance of the amount of time that is devoted to the children's interaction with the "real world" should not be undermined. According to Haugland, in their early ages, children need to engage in activities that require the use of their hands, hearts, bodies and minds.

Certainly intense computer use can distract kids from these essential activities. But the concerns of the Alliance for Childhood are probably more convincing with regard to elementary and secondary school children. At ages 3-6 children are not active purchasers of software and will basically accept whatever parents buy for them. By age 8 they start asking for software games and, as they grow towards teenage years, some children, especially boys, can get "hooked" on computer games and play for hours and even days on end.

How Can You Find the Best Software?

With so many brands on the market, how can parents evaluate the appropriateness of pre-schoolers' learning software? Daena Silverman, a mother of four-year and six-year old daughters living in Livingston, New Jersey, depends on word of mouth for the best software. She looks for software that has ease of use, keeps her children's attention, and is related to what they are doing in pre-school. Some stores provide computer stations to try out the software. Nonetheless Ms. Silverman finds that typically half the units purchased end up unused and on a basement shelf.

One possibility for evaluation is to look at Internet review sites. While many such sites are biased and driven by commercial interests, two reliable sites are www.childrensoftware.com, which includes The Children's Software Revue, edited by Warren Buckleitner, editor, [4] and www.childrenandcomputers.com, containing articles by Susan Haugland, as well as The Haugland Developmental Software Scale and the Haugland/Gerzog Developmental Scale for Websites. Sites such as these provide the reader with comprehensive, reliable reviews that may help both parents and teachers get a better sense of the level of "appropriateness" of a given software. Another site, www.superkids.com, does not accept any form of advertising for the programs reviewed, and includes input from parents, educators, software evaluation experts and children alike.

According to Haugland, children with different skills and developmental levels should be able to use the software easily. They should be able to set the pace and control the flow and direction of the events, not the computer, and they should have sufficient time to reflect or discuss with other children anything related to their activity. The instructions should be clear and easy to understand and the software should provide the kids with visual prompts and/or a help option they can refer to when needed, minimizing adult supervision. Software should contain no violent objects, characters or activities, and should include positive social values, such as cooperating, sharing, communicating and expressing feelings. Advertisement is visibly reduced and the children are exposed to concrete representations of objects, sounds and settings that belong to the real world, since children tend to "believe without much questioning that what they see and hear is true."

Although software should require minimal adult supervision, children should be encouraged to ask for teacher or parent assistance and guidance whenever a problem emerges that they are unable to resolve on their own. They should be able to save their work and get back to the program without having to start all over again if they need to interrupt their session. The installation process of the software should be clear and user-friendly and the time it takes for the program to download and operate has to be quick in order to keep children actively participating in the activities without unnecessary pauses.

Printing the children's products is very important as well, since it provides children with a tangible product they can share and discuss with their peers, parents or teachers, thereby increasing the opportunities of social interaction. It is also a good way of integrating computer activities with other curricular activities in the classroom. If teachers collect their students' computer work over time, the printouts can serve as an assessment tool to measure the students' learning development.[5]

When reading a review of a particular software, the reader must also make note of the date of the software and of the review itself, as well as the version reviewed since many programs, like Reader Rabbit, have several different versions, updates and packaging options.

Interestingly, a study done in 1997 found a positive correlation between the 13 software programs chosen by children themselves and programs that had been assigned ratings with known evaluation methods. These findings highlight the importance of taking children's preferences into consideration when evaluating a program.[6]

Learning Software in Pre-Schools and Beyond

When used appropriately, computers in pre-school classrooms can also encourage social interaction and cooperative play. By using a computer together, children learn to take turns, solve problems and decide outcomes as a group, share their problems and discoveries with each other. Children learn to develop their eye-hand coordination and fine motor skills. They start to develop a sense of self-confidence and creativity, discover the interaction between different things, learn to follow instructions, understand the concepts of trial and error and cause and effect and have fun at the same time.[7] Teachers need to receive more technology-related training to enable them to learn ways to use the computers, the Internet and the software programs themselves more efficiently in the pre-school setting.

Finally it should be pointed out that the recent expanded marketing of "robotic" toys, acting more and more like human beings, and merging the digital with the three dimensional world, is leading to a similar set of opportunities and risks. The task, once more, is to create digital dolls that preserve and hopefully enhance, rather than demean, the positive and developmental elements of children's play.[8]

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[1] According to NPDintelect, the average price of educational software packages has declined to about $15.50 per unit this year (compared to $18.20 last year), and ranges from around $9.00 to $25. The three leading firms in the entire educational software field include Learning Company, Disney, and Vivendi. Sales of educational software declined over the last year. It is likely that over the next few years most software currently purchased as CDs will be downloaded from the Internet at much lower cost.

[2] See "Fool's Gold: A Critical Look at Computers in Childhood", edited by Colleen Cordes and Edward Miller, Alliance for Childhood. http://www.education.ucr.edu/breilly/320.

[3] See Susan W. Haugland, "Selecting Developmentally Appropriate Software," http://www.childrenandcomputers.com/Articles/articles_contents.htm.

[4] See also Warren Buckleitner, "The State of Children's Software Evaluation –Yesterday, Today and in the 21st Century," Information Technology in Childhood Education (1999), 211-220.

[5] Susan W. Haugland, "Selecting Developmentally Appropriate Software," http://www.childrenandcomputers.com/Articles/articles_contents.htm

[6] Escobedo, Theresa H; Evans, Sharon (1997). A Comparison of Child-Tested Early Childhood Education Software with Professional Ratings. Paper presented at the Annual Meeting of the American Education Research Association (Chicago, IL, March 28, 1997).

[7] http://www.psych.westminster.edu/preschool/computer.htm

[8] See Nicola Yelland, "New Ways of Playing: Digital Toys for the New Millennium," http://www.aeca.org.au/darconfyell.html