Trends in Software for Children Under Six

by Warren Buckleitner and Michael Kalinowski

Two aging, albeit well-preserved, children's technology veterans discuss the state of children's software:

"I'm thrilled that computer monitors seem to be improving at the same rate my eyes are going bad," said Warren Buckleitner. Buckleitner's eyes have good reason for blurring — his team at Children's Software Revue has reviewed 8,675 children's software titles since 1984 — the year he first published the *Survey of Early Childhood Software* while at the High/Scope Foundation. Like a software census of sorts, the database that forms the core of this work makes it possible to examine trends in children's interactive publishing over the years. Here's a discussion of the past, present, and future of children's interactive media.

Warren Buckleitner is editor of *Children's Software Revue*. His work with software began in 1984, with the publication of "A Survey of Early Childhood Software" (High/Scope Educational Research Foundation, Ypsilanti, MI). While at High/Scope, his philosophy toward learning was shaped by his work as a curriculum consultant and teacher trainer, especially from conducting workshops for teachers in diverse settings as part of a National Follow Through grant. In 1993, he and a group of other educators founded Active Learning Associates, Inc., and started publishing *Children's Software Revue.* In 1995, he was awarded a Codie Award for "Best Software Reviewer."

Michael Kalinowski is chairperson of Family Studies at the University of New Hampshire and editor of *EducatorsOnlineExchange.* Formerly the director of the UNH Child Study and Development Center, and previously a Head Start director, Michael has been interested in software for children since the days of Texas Instruments computers with cassette tape drives. However, with a nine-month-old daughter, he knows that Warren is really the aging one on this team.

KALINOWSKI: So . . . what is the current state of children's software?
BUCKLEITNER: If you define "children's software" as CD-ROMs for Windows and Macintosh computers, things are pretty anemic. Consider that last year, just 257 new titles were released. Compare that with 812 new releases in 1998 when the market peaked.

KALINOWSKI: What happened?
BUCKLEITNER: Young children are swimming in a sea of interactive options that didn't exist five years ago. Besides CD-based software like *Millie's Math House*, these also include videogame systems, web sites, and interactive toys such as the LeapPad®, Leapster, Pixter™, and PowerTouch™.

KALINOWSKI: What are a few things likely to be *hot* in the coming two years?
BUCKLEITNER: Computers are getting smaller, cheaper, easier to use, and connect to the Internet through wireless connections; and this is good news for early childhood educators who want to use the Internet to maintain a web site or check e-mail. I think that the use of digital photography and video editing is going to grow immensely in early childhood education. Also increasing will be digital correspondence with parents, both by way of web sites and e-mail.

KALINOWSKI: What is fading fast?
BUCKLEITNER: Anything not connected to a network, mouseballs (in place of optical mice), those large TV sized monitors, and clunky operating systems — namely Windows 98 and Mac OS9. Also a thing of the past is the $35 CD-ROM — prices for a mainstream title are now in the $15-$20 range.

KALINOWSKI: What does some of the newest technology allow teachers to do that they couldn't easily do before?
BUCKLEITNER: More and more teachers are learning how digital photography and digital video can help them communicate with parents. ECE teachers are using digital cameras and ink jet printers to make labels for their classrooms and to document children's growth. More and more, I'm seeing teachers with effective classroom web sites, where they communicate with parents, by way of web sites, e-mail, and cell phones. Nearly all ECE educators I talk to now carry a cell phone and have e-mail at the very least, and are starting to use them to better communicate with parents.

KALINOWSKI: What are 2-3 things we most want our readers to understand about children and technology?
BUCKLEITNER: Let's start with the most important — any new technology is merely another material, to be evaluated in the same light as, say, a new children's book or a set of attribute blocks. What is still debated is whether there is a role for technology in early childhood education. I say absolutely. Children with access to the best software and interactive toys will have an educational advantage over children without access to these materials. That's because of features like instant feedback and leveling. It is silly if you don't tap into this power for your children; but like anything else, it takes some work. On the flip side, it is easier than any other time to abuse the potential of technology. For example, many of the handheld gaming devices also play videos, filling more minutes of a child's day with non-interactive, non-social play.

This power can either isolate children or further their social and cognitive development. As early childhood advocates, we need to keep our eye on applications of technology that promote developmentally appropriate play opportunities.

KALINOWSKI: So is there a bottom line here? What should we be doing to best use technology for development enhancment in early childhood education?
BUCKLEITNER: It is important to stay up to date, by owning and using a computer that connects you to the outside world and lets you manage digital images and correspondence with ease. It is also important for early childhood educators to critique new interactive media products just as they do any new material, in search of the best, and leaving out the rest. One thing hasn't changed over the past ten years — when a good piece of software or smart toy is matched with a young child, a powerful learning experience occurs.

Early childhood educator's technology competency exam

Can you check your e-mail, microwave your tea, and send a fax? If so, you'll probably score okay on this exam . . . designed especially as a short quiz to help you self-assess your own general ability to use current technology. The test on page 68 takes about five minutes and instructions for scoring are at the end.

A dozen no-fail ECE titles

WEB SITES

Boohbah Online
(http://pbskids.org/boohbah)
Teaches: Playful exploration of colors, size, and shape relationships.

For those that doubt whether the Internet can deliver a quality exploration experience should have a look at this site. Eight responsive, open-ended activities let you explore colors, motion, sounds, and so on. For example, in "Boohbah Dance," children can program simple movement routines for a character they design. Also notable is *Boohbah Patterns*, where children can create dynamic, moving mosaics. There are both Flash and Non-Flash versions of the activities; and both are well designed.

www.pbskids.org/boohbah

Learn to Read for Children at Starfall (www.starfall.com)
Teaches: Reading, phonics, vocabulary.

This is a set of well designed and leveled interactive reading books for grades K-1, that are easy enough for many preschoolers to use. There are two sections to the site. *Learn to Read*, for beginning readers, contains 15 short stories designed around letter sounds. For example, "Gus the Duck" is offered up for the letter U. In the stories, each part of the word is sounded out. All the activities are designed in Flash.

Visit www.starfall.com. Blue Mountain Arts.

NEWER PC OR MAC CD-ROMS

Clifford Reading
Teaches: Early reading, letter sounds, spelling, sounds, fluency, vowels.

Learning to read can be tricky business, but this collection of six early reading activities can help. Because children sign-in, records of what they do in each activity are saved, and their progress is bookmarked. The best part is the systematic approach to the skills presented, so that the more a child plays, the greater the challenge. Don't be fooled by the price . . . this is the most powerful, systematic reading program to come along since *JumpStart Phonics, Let's Go Read,* or *Reader Rabbit's Learn to Read System*. It would be ideal for a pre-reader (ages four or five) or for an older child in need of remedial help.
Scholastic, Inc., $19.95, www.scholastic.com, Windows, Mac OS (CD-ROM)

Didi & Ditto Kindergarten
Teaches: Early math and reading, logic, sorting, counting, music.

Children explore six early math, reading, and logic games. The games are fun, and true to the theme; plus children can exit at any time and have their progress automatically saved. Features include three levels, and records are tracked. This is the first in a series of grade-based titles featuring a brother/sister pair of beavers. All in all, this is an outstanding new product.

Kutoka Interactive, $19.99, www.kutoka.com, Windows, Macintosh

Little Bill Thinks Big

Teaches: Math, logic.

Kids visit Little Bill's home to play ten activities and earn the items needed for a surprise party. They'll use their math and logic skills to launch a submarine, bake cookies, travel to outer space, and more. One activity, for instance, has kids using logic to correctly place the tubes for Little Bill's hamster maze. Another activity has them matching shapes to make cookies. Content includes 20 mini-games, and the program features auto-leveling that adjusts to children's progress. Skills addressed include numbers, counting, sorting, sequencing, patterns, shapes, creativity, and following directions. Some of the activities are lacking in depth and originality, but all in all this is a lovely, gentle program, much like the Nick Jr. TV show. It is also rare to find quality software that features an African American child, making this a welcome addition to your software library.

Scholastic, Inc., $19.95, www.scholastic.com, Macintosh, Windows

Photo Kit Junior

Teaches: Creativity, photography, reading, writing.

This playful photo editor/organizer lets children *play* with pictures using editing tools and a variety of games. After getting your pictures from the camera to your computer, you then can set up groups of photos for each child. A child can choose from six activity centers — a Book Center, Picture Show, Art Center, Puppet Show, Special Effects, and Games and Puzzles. For example, in the photo editor, a photo can be selected, and then drawn on, cut in parts, stretched; and then saved and printed. Note that you'll obviously want to have a digital camera to get the most out of the program. There's also a nice set of eight different simple but fun games that you can play with the pictures, such as concentration, tic-tac-toe, and so

GENERAL TECHNOLOGY USE

(score_____)

1. Can you change the batteries in a smart toy such as a LeapPad?
   no ☐ emerging☐ yes ☐
2. Are you comfortable using a mouse?
   no ☐ emerging☐ yes ☐
3. Can you send a fax?
   no ☐ emerging☐ yes ☐
4. If someone hands you a cell phone, can you successfully make a call?
   no ☐ emerging☐ yes ☐
5. Can you write, save, and print a letter with a word processor?
   no ☐ emerging☐ yes ☐
6. Can you take a picture with a digital camera?
   no ☐ emerging☐ yes ☐
7. Can you find a recipe for blueberry cobbler in less than 3 minutes by searching the Internet?
   no ☐ emerging☐ yes ☐
8. Can you install a software program on a computer?
   no ☐ emerging☐ yes ☐
9. Do you have an active e-mail account?
   no ☐ emerging☐ yes ☐
10. Can you tell the difference between "good" and "bad" files sent to your e-mail address?
    no ☐ emerging☐ yes ☐
11. Can you use the Internet to find the weather forecast for next Friday's field trip?
    no ☐ emerging☐ yes ☐
12. Do you know how to change the preferences on your browser?
    no ☐ emerging☐ yes ☐
13. Do you know what a cookie is? (if you're thinking "chocolate chip," subtract 5 points)
    no ☐ emerging☐ yes ☐
14. Can you explain the difference between a PDF and a JPG?
    no ☐ emerging☐ yes ☐
15. Can you format a disk or CD-R?
    no ☐ emerging☐ yes ☐
16. Can you change the time on a computer?
    no ☐ emerging☐ yes ☐
17. Do you get excited when you spot a free, public "wi-fi" zone?
    no ☐ emerging☐ yes ☐

FOR YOUR PROFESSIONAL DEVELOPMENT

(score _____)

18. Do you have an up-to-date computer on your desk with Internet access and a printer?
    no ☐ emerging☐ yes ☐
19. Can you use a word processor to write a report with page numbers, spell checking, and correct formatting?
    no ☐ emerging☐ yes ☐
20. Have you ever successfully purchased or sold something online?
    no ☐ emerging☐ yes ☐
21. Can you download and print documents from government or educational web sites as needed?
    no ☐ emerging☐ yes ☐
22. Can you access your bank account online?
    no ☐ emerging☐ yes ☐
23. Do you currently contribute to or maintain an active web site for your classroom or school?
    no ☐ emerging☐ yes ☐

IN YOUR TEACHING

(score _____)

24. Do you use digital photography to document children's work or for classroom tasks such as science projects, making labels, and so on?
    no ☐ emerging☐ yes ☐
25. Can you play music CDs or movies as DVDs?
    no ☐ emerging☐ yes ☐
26. Do you or one of your staff members keep a mobile phone, especially when on field trips?
    no ☐ emerging☐ yes ☐
27. Do children have access to a working computer on a daily basis?
    no ☐ emerging☐ yes ☐
28. Can you recommend by name at least three quality children's web sites or software packages to a parent who asks?
    no ☐ emerging☐ yes ☐
29. Are quality software products, smart toys, and web sites part of your curriculum materials?
    no ☐ emerging☐ yes ☐
30. Do children have access to developmentally appropriate digital devices such as smart toys on a daily basis?
    no ☐ emerging☐ yes ☐

TOTAL POINTS _____

SCORING KEY:
YES = 1; EMERGING = .5; NO = 0

25-30 = You're a nerd! Ask for a raise — if you're not already the director.
20-25 = You certainly have nerd potential.
<20 = Your technology skills could use a tune-up.

on. Weaknesses include an overly chatty narrator, many cluttered screens, and a complex system for adding pictures that requires navigating around Windows. All things considered, while it's not perfect, this is a program that could become a trusted classroom companion.
APTE, Inc., $64.95, www.apte.com, Windows XP

Scholastic Keys
Teaches: Writing, graphing, creating, spelling, text-to-speech, math, word processing.

Created for Windows-computers with Microsoft Office 2000 or better, this program takes three Office applications (Word, PowerPoint, and Excel) and makes them child-friendly. Once installed, three shortcut icons appear on your computer desktop — Write (Word), Show (PowerPoint) and Count (Excel). The child-friendly menus make it easy to add pictures, change text colors (something kids love to do), save or retrieve files, and so on. This could be the ideal tool in addition to KidPix for preschool and early elementary classrooms. The program was designed last year in Australia and is now being localized in the US in the school market.

eWord, Inc., $48,
www.maxssandbox.com, Windows 98, ME, XP with Office 2000 or better

SMART TOYS

Learn Through Music
Teaches: Music, signing, colors, animals, memory, letters.

This fun, responsive, noisy music player is ideal for toddlers and preschoolers. The software comes in the form of plastic scrolls that snap into place, each delivering a 15 panel-long story. The toy comes with one scroll: *Elmo's ABC Scavenger Hunt.* Two additional cartridges are also available — *Blue's Colorful Friends* and *Dora's Farm Adventure.* Both are nicely designed, and cost $10 each. Note that there is no volume control; and this is a LOUD toy that could drive you INSANE if you're not careful. But kids love it, and that's what's important, right? The toy is powered by 3 "C" batteries.

Fisher-Price, Inc., $34.99,
www.fisher-price.com

QX3+ Computer Microscope
Teaches: Science, nature, using a microscope, creativity.

This affordable, versatile microscope plugs into your computer's USB port and puts some of the latest digital imagery technology at the fingertips of even very young children. Kids will be amazed as they zoom up to 200 times in on a bug, or as they detach the microscope from its base to view the skin on their arm from the perspective of a hungry mosquito. While the software's look and feel is for the home market, the capabilities are acceptable in a classroom. The Macintosh version requires an extra disk for $20, containing a Mac version of the software and all the drivers for system 8.6 - 9.2 (not OSX).
Digital Blue, $59.99,
www.playdigitalblue.com, Windows, Macintosh

CLASSICS

(You'll find these online for $10 or less, and they've been tested on Windows XP)

Millie & Bailey Preschool
Teaches: Reading, math, logic, matching, classifying objects.

Children are sure to like this collection of eight math, reading, and science games, taken from *Millie's Math House* and *Bailey's Book House.* These classic programs introduce early reading, math, and logic skills in clever activities. Kids use a blueprint to build a mouse house, or they select the right size shoes for little, middle, and big characters. The activities are fun and have multiple levels. Preschoolers ask to play the program over and over again.

Edmark (Riverdeep), $29.95,
www.edmark.com, Win 95, Win 3.1, Macintosh OS (CD-ROM)

Reader Rabbit Toddler
Teaches: Colors, mouse control, songs, shapes, etc.

Nine friendly activities let children explore visual and auditory attributes. Every movement of the mouse makes something happen on the screen. Kids can learn colors and shapes by piecing together simple puzzles or can help baby animals find their parents by listening carefully to the sounds the animals make. Our testers' unanimous favorite activity is the one in which Reader Rabbit leads fingerplays — the kids adore the music and the hand motions. A new version comes with a second CD that doesn't add much to the first.

The Learning Company, $29.95,
www.readerrabbit.com, Win 95, 98; Mac OS (CD-ROM)