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The INTER-HYPER-MULTI-ATOR

Publishers, worried about missing the multimedia bandwagon, are scrambling for ways to capitalize on their vast holdings by repackaging material for the electronic age. There is a collective search for the alchemist's *"Inter-Hyper-Multi-Ator"* -- a Rube Goldberg machine which will process existing books, magazines, television programs and movies into electronic gold. This may well occur, but not without serious thought. The opportunities are real, but likely to be squandered on ill-conceived products prized initially for their gimmickry, discarded ultimately as banal.

The children's and educational markets are equally consumed by this hysteria. Publishers and authors of educational software need to step back and evaluate the premise as well as the promise of "edutainment". Merging education with entertainment to provide easy learning may not be desirable. The word (offensive in itself and an immediate clue to the discerning parent) devalues both entertainment and education as it seeks to improve them. The assumption is that the essential attribute of entertainment is that it is fun and mindless; if we could just make education as mindless as entertainment our nation's educational problems would be solved.

The attitude is pervasive and is reflected in statements like "...these programs will make learning fun, will make kids forget that they are learning, will trick kids into learning while they are playing a game...." While the optimism behind such statements are well-intentioned, they backfire and give our children the message that education is dry, difficult, boring and tolerable only when disguised as a game. This may be the case when applied to that subset of education which demands rote memorization and drills (a large and successful subset of educational software) but it misrepresents the broader scope of education which encourages questions, provides tools for finding the answers to those questions and fosters the ability to find and critically evaluate information. Problem solving and communication skills are intrinsically rewarding; watch a beaming child after she has been allowed to figure out something for herself.

Learning isn't distasteful, why do we insist on packaging it as such? Dean Kamen, an engineer concerned with American education and founder of USFirst, an organization pairing engineers and students, observes that while

American high-school students admire and recognize sport's heroes and advertising icons, very few can name a single Nobel Prize-winning scientist. If marketing can create an aura around Ronald McDonald, he reasons, why not use equal public relations muscle to push inventors? We need new role models and we need to provide educational experiences which guide children towards their own inventions; even very small discoveries are enormously satisfying. The message: learning has value.

Entertainment is similarly misrepresented. While mind-numbing certainly applies to a lot of entertainment and has lucrative appeal, it is not the whole story. Entertainment also incites, stimulates, angers, comforts and inspires. I'm not just talking about Shakespeare but of any of the videos that your children were watching last night. While they were sitting there motionless, eyes glued to the screen, something was going on in their minds. When the kids start spontaneously play-acting the parts from the fairy-tale the following morning, they are participating in last night's media. Storytelling is the bedrock of education.

Interaction (in the context of today's home computers) is something you do with your hands, not with your mind. Interactive is not the opposite of "passive". Books, television, and recorded music are anything but "passive" media; they are engaging and involving. Maybe we could define mind-numbing as passive media and mind-involving as active media. Discarding mind-numbing as having no place in any considered scheme to improve education, we need to concentrate on what I would like to call "active media" programs not defined by the amount of button-pushing "interaction," but designed to encourage children to become active participants in the process of learning.

Parental confusion over children's software is reinforced by the "wonk" mystique surrounding computers. Upscale parents, terrorized that their children are going to grow up to be computer illiterate are sending children to classes (and computer camps!) to familiarize them with the fundamentals of today's home computers: the mouse, the screen and the keyboard. Most likely, today's toddler who has mastered the mouse will not hold any significant computer-related advantage over her friend who spent those hours playing outdoors. In a dozen years, when they are applying to colleges, the mouse may well be extinct.

This is not to pan all computer programs for children or discourage their use. It is a call for restraint: a little multimedia goes a long way. Encyclopedic programs are dazzling for the sheer quantity of information, references, cross-

references, and features. While they make terrific demonstrations, if we expect students and their instructors to stay afloat in this dizzying array of material, it is essential to design a coherent navigational guide. It may not be necessary to use every available feature all of the time. Notably, The Voyager Company has elected not to use voice-over for their celebrated Expanded Books collection. They've chosen to compliment the text, not overwhelm it.

In the educational arena, pairing audio with text has unleashed programs where the words are highlighted as the text is read aloud -- a "sing-along-with-Mitch" approach to learning to read. The child is cheated out of the chance to sound-out or recognize the word for herself. Biting your tongue while a child struggles to sound-out a word, *that's* interactive.

Believe it or not, the *Hyper* component of the *Inter-Hyper-Multi-Ator* doesn't stand for *hype*, it refers to a notion of a non-linear or non-sequential network of information. Theaters are testing films with branching story structures and audience participation to determine the outcome. These are bound to be unsatisfying. A multiple choice mystery takes the Who out of Whodunit.

Leaving some things out gives us a chance to fill in the blanks. A non-linear super structure doesn't mean the demise of a good story. Leave out the scrolling text in a move towards the oral traditions of storytelling. Only recently have stories been so homogenized, strictly linear in presentation, uninterrupted (except by commercials), and constrained to the capacity of a video cassette. Oral tradition has always been participatory; the audience interrupted, the dancers provided diversion, and the storyteller had license to digress and modulate the tale for the audience and for the occasion.

The *Inter-Hyper-Multi-Ator*, when properly tuned, could play an important tune: Learning is not a game, it is a quest.

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