

MG: Research Smesearch

by Gary E. Bloom

Would you rather be in the desert, dying of thirst, or drinking a Miller Lite?

“After extensive research, The Miller Brewing Company has determined that Miller Lite is America’s favorite beer.”

No, that research never took place. I assume that Miller still uses old athletes to sell their product. But I do know that research has been slanted to justify nearly everything. In the mid-seventies a tobacco company sponsored a university study of airline pilots who happened to be cigarette smokers. The study concluded that these pilots were less nervous in the cockpit when allowed to smoke than when they refrained from smoking. I’ll bet they would have been even less nervous after a couple of Miller Lites.

What’s the Point?

What’s this got to do with educational software? Most computer programs are backed by research—information that demonstrates that the software’s the right design for the right group. So when a company promotes their educational software, they believe in it. They’re sure they have a product that proved itself in the harsh environment of their laboratory—most likely a classroom, or some other specified group of children. But what was measured? Whether these children preferred and learned better with Mathbooster than with their regular workbooks? Or did they like Brer Bear Times Tables more than NumberSubmarine? And given their druthers would they prefer Numero Uno, or their favorite Nintendo game, or dashing outside to play T-Ball?

Research is usually defined as “objective,” designed to inform the investigators of the good, the bad, and the ugly. Imagine truly objective research, reduced to its logical absurdity: All researchers would come to nearly the same conclusions so there would be the most obvious and best design. So all programs would be alike.

Of course this is ludicrous. There is no such thing as extracting the human element as if it’s so much caffeine. Research is only objective within the narrow boundaries chosen by the investigators. If the tobacco company wanted balanced information they also would have asked, “Are pilots who are allowed to smoke, less or more nervous than pilots who aren’t smokers?” And, “Does a relaxed pilot fly a plane better than does a nervous one?”

I used the tobacco company to make a point. Most research doesn't need to be primarily defensive—certainly not the research done by educational software companies. Not only do they not sell the primary health hazard, they don't even have to protect a huge, installed base of Lotus 123, formatted spreadsheets. Educational software is one arena where a company can obsolesce their previous hit with only lament for the money spent on past promotion.

I think educational software companies want to produce wonderfully designed programs. I believe those involved in designing and selling educational software like children and want to help them learn. They are doing their best to make the stuff good and attractive. After all, they must sell the stuff to keep going. So they do research to get proof that their program is good and marketable. But the proof must be viewed within its limitations.

The illusion of objectivity is only the second worst problem in research. The worst is revealed by a story.

Smart (Alec) Dolphins

In the fifties and sixties, dolphin research was big, and John Lilly headed the most famous project. So famous that Flipper (Remember Flipper?) was eventually donated to the project. Lilly and his team believed that dolphins were close to humans in their level of intelligence. At least they believed they believed it.

One fine, sunny day, an experienced trainer was having an experienced dolphin bring back colored balls. The dolphin was supposed to return the correctly colored ball. Except he didn't. Now this dolphin had done this trick many times in the past. He knew his red from his green, and his green from his blue. This day he didn't return the correct ball and the trainer was befuddled. Was it the wrong dolphin? Nope. To experienced trainers, dolphins don't all look and act alike. When the trainer attempted to start anew and teach again about colored balls he was faced with an obstinate dolphin.

The trainer finally realized that he was being teased by a bored dolphin who didn't want to retrieve colored balls any longer. Even for a reward of fish. In other words, the dolphin appeared stupid because he was smart—too smart to put up with boredom, and smart enough to protest mindless compliance. The trainer didn't catch on at first because his expectations of the dolphin were too low. He did not realize the dolphin could jump a level of abstraction and tell him: "Take this job and shove it." As many children who are intelligent but unchallenged, bored but inarticulate, the dolphin became delinquent.

The Point Is

If software becomes another medium that aims too low, don't blame the computer, don't blame the students, don't blame the teachers, don't blame the software companies. Blame you and me for buying the junk.

As parents, teachers, software designers, and software reviewers, do we really think children are intelligent, creative, and naturally inquisitive? Or do we just believe we believe it?