Technology: The Next Generation

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While reading about the lives, literacies, and technologies of those profiled in *Life at the Margins: Literacy, Language, and Technology in Everyday Life* (Merrifield, Juliet, David Hemphill, and Mary Beth Bingman. New York, Teachers College Press: 1997.), I began thinking about these issues in terms of my two-and-a-half year old son, Gary. Because my husband, Phil, and I have always had an appreciable amount of technology in our home (computers, microwave, VCR, answering machine), Gary was exposed to technology early and has always seemed interested in it.

Phil began interacting with Gary using computer learning programs such as *Reader Rabbit*. Gary would stare at the computer screen and listen to his father's voice with great contentment. I've watched this contentment grow into enthusiasm and skill over the last two years. This two-and-a-half year old is very much at ease and self-assured on the computer. How did Gary become so comfortable so young? Phil and Gary have always enjoyed spending time together; however, computer time has always been a special time for them to bond. This father-son relationship with technology is the focus of my case study.

Phil is a Human Resources Director. His job centers around issues of performance enhancement, as well as training and development. He primarily uses three forms of technology in his work: a personal computer (as an analytical tool for the departmental budget, time sheets, and specific interactions of his staff with external customers, and to store information such as training curricula and various communications items); a personal digital assistant, also known as a Palm Pilot (to record his schedule, telephone database, memos, reports and electronic mail); and the telephone to retrieve voicemail messages.

Phil's philosophy on technology is that it is the greatest liberator and the greatest challenge for the human race. Technology is liberating as long as people have access to it. By the same token, technology changes so rapidly that people can easily be left behind in terms of their ability to understand and afford it: "Through technology we are able -- if individuals are given equal access -- to level the playing field, because of the tools that are associated with it. For instance, the computer allows individuals to communicate on an equal basis. They (computers) allow them to have access to some of the same resources that individuals of a different socioeconomic status would have. As far as being the greatest challenge, technology, unfortunately, has the ability to develop at such an incredible rate that it can leave behind many people in a short period of time."

In light of the rapidity with which technological advances occur, it is very important to Phil that Gary has a strong technological foothold. He wants Gary to see technology as a natural, imperceptible extension of himself: "I want Gary to establish a rapport and level of comfort with technology. In Gary's generation it will be increasingly more important for him to be able to interface with technology without being conscious of the fact that it's something different than the physical realm." This attitude is apparent when Phil and Gary spend time together on the computer. Phil wants Gary to understand how things function, relate and impact each other: "I'm trying to communicate relational aspects. By relational I mean that the movement of the mouse relates to the visual movement of the arrow on the screen. The size of the arrow relates to the ability or the functions of the click. So if there is a fat arrow and he clicks on it, there is an action that's expected to take place on the screen. If the arrow becomes a finger, there's a different action. If there's no change in the arrow, no action takes place by clicking."

Many daily examples illustrate how invisible and natural technology has become to our two-and-a-half-year old. Gary and his dad regularly play the Thomas the Tank Engine computer game. Whenever they come to a point in the game where a decision is needed, Phil will ask Gary how he wants to handle it. Gary, who is very adept at articulating what he wants to do, is always prepared with a response. In order to implement Gary's decision, Phil will show him where to position the arrow and allow Gary to click on the object for the desired action. These decisions will continue throughout the game, with Gary very engaged and able to choose from myriad options quickly, efficiently, and effortlessly.

Recently, Phil and I received a valuable lesson about Gary's grasp of technology. We put a small television/VCR in Gary's room so that he could watch some of his favorite videos. Phil explained and demonstrated how to stop and eject the video when Gary was ready to watch the next one. Phil and I returned ten minutes later to check on Gary and help him switch videos. Not only had Gary stopped and ejected the first video successfully, he had already inserted and begun to watch the second video. This is a poignant example of how invisible technology is to Gary; it doesn't require much thought for him to manipulate and interact with it successfully.

Another example of Gary's ease with technology occurred as I concluded my final interview for this case study with Phil. Gary hopped into the chair beside me (in front of my mini-recorder), unabashedly picked up the recorder and informed me, "Mommy, I want to talk to it, too." Phil suggested that I interview Gary to see what he has to say about computers. To no one's surprise, Gary was ready to share his insights: "Yes, I like computers -- *Hot Wheels* and *Thomas* are my favorite computer games -- I like the little computer. Yes, I learn on the computer. I like to play on the computer by myself. I play *Thomas*, *Putt-Putt*, *Reader Rabbit*, and *Airport* on the computer."

My observations and interviews have shown me that Gary indeed possesses a natural proclivity for technology; however, the fact that his father places such a high value on technology and is constantly passing on his knowledge to Gary appears to be the foundation upon which Gary's acuity is built. Phil foresees both immediate and long-term benefits from his son's immersion in technology:

Immediately it (technology) gives him access to encyclopedic knowledge. When I was younger, the ability to look through dictionaries and reference books really opened up new avenues for me to pursue information. In his generation he's going to be comfortable -- and needs to be comfortable right now -- with accessing CD-ROM information, as well as Internet information and web site information. So in the short term, it's providing him with a new window to information. In the long term, I believe specifically that his career will be so entrenched in technology that a comfort level will be essential, not a nice-to-have like it is with our culture but a must-have.

To a great degree Gary's predilection for technology stems from his father's love of technology, as well as the importance he places on technology. A question that remains is how the children of people with limited computer literacy will fare in the future. Phil and Gary have access and interest in technology. Had Phil not nurtured and valued Gary's interest, Gary probably would not be the technologically savvy toddler he is today. But access isn't necessarily the most important factor. Parents who do not understand technology or cannot afford to buy home computers can still encourage and nurture their children's interests. Once those interests and (in some cases) natural talents are channeled, as in my son's case, it's easy for technology to become an extension of oneself. Phil states it quite aptly:

Technology will be seamlessly integrated with Gary's everyday life. Technology will be very natural for him. He'll view computers very differently than our generation. Technology will be his life. The virtual existence that computers allow will be a significant component. For example, by the time he's sixteen, the discussion of the cyber world will be such a natural extension of his existence that it will be difficult to ascertain the difference between cyber existence and physical existence

Since technology is here to stay, it would behoove us all to learn as much about it as we can -- if not for ourselves, for our children.