

CHILDREN AND THE MEDIA

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Harlem Snapshot— Schooling in New Technologies

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The phone rings in the computer lab of Manhattan's PS 125, the Ralph Bunche (elementary) School for Science and Technology. Teacher and computer maestro Paul Reese answers: "Hi, Renso." At the other end is Renso Vasquez Jr., a seventh-grader from JHS 43, a half-mile away in south Harlem. A 1993 Ralph Bunche graduate, Renso is now helping his junior high—a grant-backed partner of PS 125—to utilize the kind of new technologies he learned about in grammar school. On this day, he is employing an integrated computer/video program that allows users at two locations to see and communicate with each other.

After switching to the appropriate screen on his computer, instructor Reese calls across the room to Ifeoma Anunkor, a sixth-grader who, as she often does, is spending the afternoon in the lab. Together, they turn on and adjust a nearby video camera and complete the link with JHS 43. Waving to Renso, who appears with a classmate in a corner of the screen, Ifeoma takes over in front of the keyboard. She begins a multimedia correspondence that attracts observers from around the room.

The teleconferencing technology associated with this scene may seem routine to many corporate executives. But for the children at the Ralph Bunche School—African American and Latino youngsters from mostly marginal neighborhoods and families of modest means—such technical tools are truly compelling and eye-opening.

For several years, through a series of grants, PS 125 has participated in projects that expose its students to learning vehicles rarely found at

such urban public schools, or even at many better-financed institutions for that matter. From a Panasonic-sponsored "Kid Witness News" video journalism program to a spot on the global Internet, the boys and girls at Ralph Bunche have enjoyed innovative educational opportunities. What the students' experiences suggest are not just the wonders and potential of these technologies, but also the consequences if their benefits are not made widely available.

The debate over access, of course, is far from new, having figured in early discussions of cable television well before the nascent information highway began to evolve. Yet recent developments, including the drafting of congressional telecommunication legislation, have lent greater urgency and import to the access question. Due in part to the activity of advocacy groups, public-interest criteria—the push to wire schools, libraries, health clinics, etc.—have become one priority in the Clinton administration's plans for the National Information Infrastructure (NII).

While nearly everyone agrees that the private sector will (and should) be largely responsible for advancing and harmonizing the existing electronic pathways, and while an environment of minimal regulatory restrictions is deemed essential to productive competition, the need for public considerations is recognized. The conflicts are over what constitutes that need, how adequately to address it, who pays and how much.

Visiting a school like Ralph Bunche can help illuminate and give focus to these controversies. Moreover, some time with these young people and their modern tools highlights especially vividly the educational promise of new media.

Educators have long touted the academic rewards of computers, if used imaginatively, and the children of PS 125 certainly provide supporting evidence. Through inviting screen images, sounds and games, each student is encouraged not only to learn facts but to enhance his or her verbal and problem-solving abilities.

On a typical afternoon, sixth-grader Moses Wallace is engrossed in a game that simulates a time machine, challenging players to absorb key details about the world's cultures and historical eras. Sitting nearby, Nephtali Cruz is intent on his own screen, on which he is busy tackling mystery stories that test his knowledge of geography. He tracks suspects from Moscow to Singapore, collecting clues along the way.

Although such edifying computer games have existed for a decade, they are clearly improving steadily in their sophistication and their capac-

ity to engage young minds. Silent, boring, monochrome drills have yielded to colorfully provocative adventures. Given the uproar over the violence-laden “Mortal Kombat” and others of its genre, we can take comfort in how effectively many software designers, noting children’s affinity for video games, are actually teaching them something valuable.

“Edutainment” denotes this rapidly growing breed of programs—more than 200 new ones appear annually—captivating countless kids and teens. As economies of scale curb prices and CD-ROMs proliferate, multimedia learning is exploding. Yet the trend has primarily been limited to middle and upper-middle class households, to the estimated 4 million multimedia home PCs. Only a comparatively few school systems—notably in California and Texas—are moving aggressively toward utilization of self-contained multimedia units or, as in North Carolina, Florida and Utah, toward various forms of video/computer networking. Strapped inner-city districts are understandably lagging. Thus the Ralph Bunche case is representative yet in some respects exceptional, an indication of what might be.

The effect on individual students is apparent. Ifeoma is a technology devotee who “loves” the Broderbund geography/mystery game “Where in the World Is Carmen Sandiego?” that her classmate was playing. An editor of the Ralph Bunche newspaper, the *Computer School News*, Ifeoma has been using computers since first grade and affirms that they have reinforced her academic interests and motivation. Although she says that “my mom wants me to be a politician,” Ifeoma has not decided on a career. One possibility is to be a reporter or TV anchor “like Tom Brokaw.”

In the long run, more significant than the educational games at Ralph Bunche is the students’ familiarity with interactive networking. The children of PS 125 are encountering, early on, technologies that will mark the unfolding information age. These youngsters are testing firsthand the kind of tools that are emerging around the country, chiefly—so far—for the relatively few communities able to afford the necessary fees and equipment.

Given that less than 20 percent of classrooms have telephone lines, let alone modems and adequate computers, a universal digital highway is still quite distant, even once basic wiring concerns are addressed. In order to obtain a concrete measure of current conditions, the U.S. Department of Education this fall is joining the National Telecommunications and Information Administration and the Federal Communications

Commission in compiling a survey of telecommunications links in America's classrooms. Secretary of Education Richard Riley, in testimony before the Senate Commerce Committee in May 1994, implied that meeting the goal of universal access would be difficult. He asserted that "free connections to NII may not be enough," that "free usage of the telecommunications lines" for educational purposes, along with further steps, might be necessary.

For those schools that are already connected, free bulletin-board services like FrEdmail (Free Education Mail) and FidoNet's K12Net allow students and teachers to exchange messages; at a cost of several hundred dollars per year or term, classes can pursue more curriculum-directed projects via AT&T's Learning Network or the National Geographic Kids Network, among others. A program called the Global Lab permits international student cooperation in scientific and environmental matters.

PS 125 is part of the National School Network Testbed, which includes initiatives at the national, school-district and intraschool levels. In addition to Internet privileges, the Testbed provides specific forums in areas such as science, math and teacher development. The National Science Foundation has been a principal funder of the Testbed, which continues to grow both in scope and scale.

Returning with a handful of his students from a national education and computing conference in Boston last spring, Reese was exhilarated and proud. Four sixth-graders and two junior-high "graduate assistants"—Renso and fellow lab veteran Hamidou Diori—had wowed the conference with their exhibition of networking skills. Their workshop featured an elaborate series of e-mail messages, back and forth between Boston and New York, along with Hamidou's display of the Gopher server used to navigate the Internet. Now back home in the lab, the students sampled new software and sent electronic mail to people they had met at the conference.

These and other pupils have enjoyed the benefits of Ralph Bunche's Computer Mini-School within a school. Comprising 160 of approximately 700 students, the Mini-School (to which admission is based on a lottery) brings its member classes into the lab for additional time, both for word processing of regular coursework and for special computer instruction. Each child has an e-mail account.

The intense fascination, verging on reliance, that many adults have with e-mail communication is now generally acknowledged; the power

that this medium holds for children, however, has not yet been as widely documented. In the Mini-School setting, e-mail has helped Reese and colleagues promote a sense of “community and stability” that has resulted, without deliberate effort, in improved standardized test scores. “I respond to every student [e-mail] letter I get,” maintains Reese—up to several dozen every day.

In a reply to an e-mail note that Reese had sent him, one boy wrote, “That lettler [sic] was great. I never knew that you were so intrested [sic] in carpentry.... I know how to work with tools and power tools.” In itself, the simple message is hardly earthshaking, but it reflects a level of bonding between teacher and child, and a growing facility with a technology that most adults—inside Harlem or out—have yet to master. The electronic medium can facilitate expression and exchange of ideas, among students, among teachers and between the two groups. And communication within the school is frequently supplemented by meaningful contacts outside it.

At PS 125, e-mail is remarkably versatile. Articles and information for the *Computer School News*, which is composed and available on screen, are submitted electronically. Then there are the opportunities for external communication. Ralph Bunche students have established, and carefully recorded, correspondence with people across the United States and abroad. Whether doing research that requires discussion with a librarian in another state or merely building friendships with digital pen pals, the children transcend the physical confines of their school. Fifth-grader Kenneth Lopez even used e-mail to lodge a complaint with President Clinton. Kenneth’s concern: why “Take Your Daughters to Work Day” has no equivalent for boys.

One expert who is familiar with PS 125 agrees on the significance of its networking component. Linda Roberts, Education Secretary Riley’s advisor on technology, downplays the extent to which the Ralph Bunche School is unusual, at least from the national perspective from which she observes a great deal of innovation within particular districts and institutions. Rather, she stresses PS 125’s importance as an example of how electronic networking can be “a facilitator for gathering and sharing information.” The interactive possibilities, she asserts, are “making a difference in what [the children] are learning and how they’re learning.” Paul Reese, she says, is “a pioneer” whose “relentless” efforts have been fundamental. Not surprisingly, her experience convinces her that

such deeply involved educators are crucial in any viable classroom technology venture.

It's no accident that Roberts knows about the Ralph Bunche experiment. Because of its technological orientation and resources in its urban location, the school has attracted a rare amount of attention. Educators, journalists and elected officials including Rep. Charles Rangel, D-N.Y., have come to watch the students at work. In May, FCC Chairman Reed Hundt stopped by. Chronicling the incident for the *Computer School News*, 12-year-old Renso concluded: "I guess that Mr. Hundt's visit has raised our confidence.... [It] definitely has made me proud of what this school has to offer. I think that the people at Washington, D.C., were very impressed with us!"

Indeed, Hundt, once a seventh-grade social studies teacher before studying law, has demonstrated a sincere commitment to the access issues confronting industry and Congress as well as the FCC. In a May 10 speech, he argued that in order to replicate PS 125-type capabilities nationwide, "we will need special transmission rates for our schools which do not have the financial wherewithal to pay the absolute top dollar. We will need to make sure that the opportunity to participate extends to all schools."

While a look at PS 125 does reinforce some of the widespread optimism about technology's educational impact, the experience there also evokes the magnitude of obstacles that remain. As important as the hardware is, advanced computers and interactive networks are of limited value without a sufficiently redesigned curriculum that fully integrates them; thus the Mini-School is modest as a model for extensive reforms. In addition, there are the more basic challenges that disproportionately afflict schools in impoverished neighborhoods. At Ralph Bunche as elsewhere, one hears pleas for more generous staffing to ease class size and provide children with more individual attention, particularly those whose behavior reflects social deprivation. And keeping in mind what a recent national study suggested—that students score best in states that spend a high percentage of their education monies on teachers—policy-makers should be wary of primarily technological solutions. Educators understand the need for a more comprehensive approach, but only a fraction of schools have the will and the money to move forward.

Clearly, the power of technology is finite and easily exaggerated; human and fiscal elements will continue to play a major, perhaps deciding, role in the educational equation. Yet irrespective of these vagaries,

interactive multimedia tools in themselves are becoming increasingly important, and children unable to share in them will be at a disadvantage. Within a decade or so, most middle-class homes and school districts will likely possess advanced PCs or set-top devices—machines that will enable students not only to become computer literate but to prepare for an information society. In this environment, universal access to the digital highway will be merely a minimum requirement, not a panacea.

Still, it is encouraging to glimpse what the new media might bring. While the results of the digital revolution will remain uneven and uncertain for years to come, there are real, positive dividends to be secured, lively imaginations to be captured—not just frightful scenarios to be avoided.

Late in June, Reese was scrambling to find students to complete the year-end edition of the *Computer School News*. Ifeoma, Rebecca Best and the other sixth-grade members of the staff were busy with graduation festivities. The “graduate assistants,” Renso and Hamidou, were elsewhere, and there were no interested fifth graders in the lab. So Reese turned to a couple of bright fourth graders, José Hernandez and Evelyn Lopez.

With surprisingly little guidance, they did the job. Deftly manipulating the desktop publishing software, they inserted photos, wrote captions, aligned margins, made headlines the right size. They made a mistake or two, of course, but José and Evelyn learned quickly from their errors and before long were impressively competent. After three afternoons, the fourth graders’ passion and curiosity had prevailed; the newspaper was finished and ready for distribution, both within the school and on the Internet. Confident and pleased with their achievement, José and Evelyn could look forward to the fall even as they savored their summer vacation. The *Computer School News* had two new editors.

This article was written when Josiah Brown was The Freedom Forum Media Studies Center’s assistant to the executive director for special projects. He is currently assistant to the president, New School for Social Research.