More than a few financially inexperienced bank customers have told our committee staff that when they looked over the disclosure forms, they did not understand what they read. These customers typically would then ask the investment sales people to interpret the forms for them. In these cases, the sales people told their customers that the documents were just a ''formality'' to open the account, or that the form simply was stating what the sales people had told the customers.

It is not hard to identify the problem because the problem is, in some cases, the brokers have made misleading, false statements about the nature of the uninsured products when they describe them, such as, ''This is as safe as the money in your pocket, and you will only lose money if the Federal Government goes bankrupt,'' or, ''It is backed by something better than the FDIC.''

Finally, the legislation that I introduced last Tuesday, which was crafted after numerous meetings with industry and consumer groups, would provide needed consumer protections for financially inexperienced customers. This legislation would provide protections to financially inexperienced bank customers by, one, full and clear disclosure about the risks associated with uninsured products; by establishing limits to compensation that institution employees receive for making referrals to securities sales people. Remember the case of Sally, Mr. President, our bank teller who got a nice commission by referring Mrs. Jones' private banking records and situation to a broker across the aisle from her; and to establish guidelines for uninsured products and promotional materials; common sense physical separation of deposit and nondeposit sales products would be another area of this legislation; and fifth, Mr. President, we would end in my legislation the practice of sharing bank customers' personal financial information without the customer's explicit consent; and finally, Mr. President, we would increase the coordination of securities enforcement activities between the Federal banking agencies and the Securities and Exchange Commission.

I am very hopeful that this will begin a dialog in which we will find as an end result a cure for this particular problem that we are addressing today in the Senate. It is a problem, we think, of severe magnitude. It is a problem which has not risen to the height of many of the concerns we have expressed here in recent months, but we do think this is a concern which should be addressed and should be one of protections that we should ensure for those potential customers of uninsured bank products such as mutual funds and certain bond funds that are uninsured.

Finally, Mr. President, if we do it for no other category of our population, let us do it for those individuals like Mrs. Jones, that 77-year-old widow who has no one to lean on, no advice, no adviser, and truly finds herself in the grips of, in my opinion, unethical salespersons, unethical brokers, and people who are interested only in making certain that they receive a nice fat commission in selling Mrs. Jones uninsured bank products which truly may wipe out all of her assets.

Mr. President, I see no other speakers or Senators seeking the floor. I wish to thank the Chair, and at this time I yield the floor and suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Ms. MOSELEY-BRAUN. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

GAO REPORT AND THE NATIONAL EDUCATION TECHNOLOGY FUNDING CORPORATION

Ms. MOSELEY-BRAUN. Mr. President, I rise today to present the results of the second in a series of five very important studies being conducted by the General Accounting Office on the condition of America's schools and to announce the creation of the National Education Technology Funding Corporation.

I first became aware of the problems facing our Nation's education infrastructure while serving in the Illinois House of Representatives. Throughout my 10 years in office, I visited school districts across the State and witnessed the deteriorating condition of public school facilities in both rural and urban districts alike.

Yet, it was not until I began working on education legislation in the U.S. Senate that I learned that the Federal Government had not collected data on the condition of our Nation's public school facilities since 1965.

GAO REQUEST

Knowing that my efforts to improve our Nation's education infrastructure would be limited by insufficient data, I sent a letter to the General Accounting Office last year, which was cosigned by Senators KENNEDY, PELL, SIMON, and WELLSTONE, requesting a comprehensive, nationwide study on the condition of our Nation's public school facilities.

In responding to my request, the General Accounting Office surveyed a random sample of our Nation's 15,000 school districts and 80,000 public schools from April to December 1994. GAO staff members also visited 41 schools in 10 school districts across the country to supplement their quantitative data with personal observations. Based on responses from 78 percent of the schools sampled, GAO began preparing five separate reports on the condition of our Nation's public schools.

FIRST GAO REPORT

The first GAO report, which was released on February 1, 1995, examined the education infrastructure needs of our Nation's public elementary and secondary schools. As expected, this report made clear what most of us already knew; that our schools are deteriorating and we need to fix them.

The GAO report concluded that our Nation's public schools need $112 billion to restore their facilities to good overall conditions; that is to say, without code violations and the like. This was not decorating issues—good overall conditions.

Of this amount, the GAO found that public schools needed $11 billion just to meet the Federal requirements—including $6 billion to make all programs accessible to all students and $5 billion to correct or remove hazardous substances.

And so the first report focused in on the basic facility infrastructure needs and reached the conclusion that we needed $112 billion just to get our schools up to code, removed of health and safety violations and threats to the students.

SECOND GAO REPORT

The second GAO report, which was released today, focuses on our Nation's education technology infrastructure needs. Once again, this report concludes that our Nation's public schools are not designed or sufficiently equipped to prepare our children for the 21st century. And that is actually the name of it: ''School Facilities: America's Schools Not Designed or Equipped for the 21st Century.'' It is a pretty devastating title for the report itself, and this was a serious study that was done by the GAO.

More specifically, the GAO report found that more than half of our Nation's public schools lack six or more of the technology elements necessary to reform the way teachers teach and students learn including: computers; printers; modems; cable TV; laser disc players; VCR's; and TV's.

In fact, the GAO report found that even more of our Nation's schools do not have the education technology infrastructure necessary to support these important audio, video, and data systems. For example, this report concludes that: 34.6 percent of schools lack sufficient electrical power for computers; 46.1 percent lack sufficient electrical wiring; 51.8 percent lack sufficient computer networks; 60.6 percent lack sufficient conduits and raceways; 86.8 percent lack fiber-optic cable; 61.2 percent lack sufficient phone lines for instructional use; and 55.5 percent lack sufficient phone lines for computer modems.

Mr. President, the General Accounting Office further examined these national statistics and confirmed our worst fears: that the availability of education technology in our Nation's public schools is directly correlated with community type, the percentage of minority students, and the percentage of economically disadvantaged students.

In other words, the GAO report found that although our Nation's education technology needs are great in both rural and urban school districts, urban schools have greater education technology needs in every category. It also found that the education technology needs in our Nation's schools increase in every category as the percentages of minority students and students receiving free or reduced lunches increase.

Mr. President, these results are simply unacceptable. There is absolutely no reason why, in 1995, all of our Nation's children should not have access to the best education technology resources in the world.

I point out that as between urban and rural, this issue affects rural school districts as much as it does urban school districts. The children in rural communities are denied access to the sources of information, the data, the resources that are out there for them to improve their opportunities for education, as well as children in urban areas where there is a greater concentration of students.

As you know, we are in a new era in economic competition. All over the world, barriers to trade between nations are falling. We are witnessing the development of a truly global marketplace. I believe that America can lead the way in this marketplace. But if we are to succeed, if we are to retain our competitiveness into the 21st century, there must be a renewed commitment to education in this country.

If there is any objective that should command complete American consensus, it is ensuring that every American has the chance to succeed—and that, in the final analysis, is what education is all about. No issue is more critical to our country. And no issue is more important to me. Nothing makes a bigger difference in a person's life than opening opportunities. Certainly nothing has made a bigger difference in my life.

It is vital to the interest of our Nation that we maintain quality public education for everyone. Education is not just a private benefit but a public good as well. It is the cornerstone of a healthy democracy and, as a society, we all benefit from a well-educated citizenry. It is the means by which we prepare our children to succeed—to make a living, to participate in the community, to enjoy the arts, and to understand the technology that has reshaped our workplace and, indeed, to compete in this global economy.

Without a strong education system in this country, our young people will not be prepared and will not be able to hold their own in competition with the other communities in the world, which devote a greater proportion of their resources to the education of their children and the preparedness of their work force.

TECHNOLOGY

Nonetheless, it will be difficult if not impossible for us to prepare our children to compete in the emerging global economy through the current educational system. In order to prepare American students to compete with their foreign counterparts, systemic school reform must occur. Systemic school reform means taking into account and addressing all aspects of the educational system.

Mr. President, the increased competition created by the emerging global economy requires teachers and students to transform their traditional roles in many ways. It requires teachers to act as facilitators in the classroom, guiding student learning rather than prescribing it. It also requires students to construct their own knowledge, based on information and data they manipulate themselves.

Technolgoy can help teachers and their students successfully play the new roles that are being required of them. Technology can help teachers report and chart student progress on a more individualized basis. It can also allow them to use resources from across the globe or across the street, for that matter, to create different learning environments for their students without ever leaving the classroom.

On the other hand, technology can allow students to access the vast array of material available electronically and to engage in the analysis of real world problems and questions.

CENTENNIAL HIGH SCHOOL

Mr. President, by way of example, advanced chemistry students at Centennial High School in Champaign, IL, are currently taking advantage of the benefits associated with education technology.

Here is one of the deans of education on the floor, Mr. President, Senator PELL. Of course, his name is so well associated with education. I had someone say to me, ''Senator PELL made it possible for me to go to college,'' because of Pell grants, and I thought that was one of the finest compliments that could ever be given to an individual.

Mr. PELL. Thank you very much.

Ms. MOSELEY-BRAUN. To continue, Mr. President, through an innovative partnership with the National Center for Supercomputing Applications, these students are developing experiments that allow them to move parts of molecules on their computer screens in response to their own computer commands. In one type of simulation, students watch the orbitals of models in reaction to imposed actions. Another type of simulation demonstrates the ionization of atoms—how the size of atoms changes when ions are added or subtracted. That is precisely the kind of education that we want to make available to every child in America. It is the challenge of the education infrastructure that I think we have to meet in order to do so.

LOCAL PROPERTY TAXES

Mr. President, we are failing to provide all of our Nation's children with education technology resources like those being provided at Centennial High School because the American system of public education has forced local school districts to maintain our Nation's education infrastructure with local property taxes.

For a long time, local school boards were able to meet that responsibility. However, the ability of local school boards to continue to meet that responsibility has steadily declined.

Local property taxes are now all too often an inadequate source of funding for public education. What is even worse is that this financing mechanism makes the quality of public education all too dependent on local property wealth.

As a result, the second GAO report found that, on average, only 8 percent of local school bonds was spent on computers and telecommunications equipment. That is, for the average $6.5 million bond, only $155,000 or 2 percent was provided for the purchase of computers and only $381,100 or 6 percent for the purchase of telecommunications equipment.

Nonetheless, most States, including my own of Illinois, continue to force local school districts to rely increasingly on local property taxes for public education, in general, and for education technology projects, in particular. In Illinois, for example, the local share of public education funding increased from 48 percent during the 1980–81 school year to 58 percent during 1992–93 school year, while the State share fell from 43 to 34 during this same period of time.

I believe the Federal Government must also, frankly, accept a share of the blame for failing to provide our Nation's children with environments conducive to learning. The Federal Government's share of public education funding has fallen from 9.1 percent during the 1980–81 school year to 5.6 percent during the 1993–94 school year.

GOALS 2000

Mr. President, Congress passed the Goals 2000: Educate America Act which President Clinton signed into law on March 31, 1994. I supported this legislation because it promises to create a coherent, national framework for education reform founded on the national education goals—including the seventh national education goal which promotes parental involvement at all grade levels.

Nonetheless, I firmly believe that it is inherently unfair to expect our children to meet national performance standards if they do not have an equal opportunity to learn.

If they are denied equal access and equal facilities, then they will have a very difficult time meeting and supporting national expectations and standards.

EDUCATION INFRASTRUCTURE ACT

That is why, last year, I introduced the Education Infrastructure Act. That legislation addresses the problems highlighted in the first GAO report by helping local school districts ensure the health and safety of students

through the repair, alteration, renovation, and construction of school facilities.

More specifically, that legislation authorizes the Secretary of Education to make grants to local school districts with at least a 15-percent child poverty rate and urgent repair, renovation, alteration, or construction needs. Clearly, with the needs being so great, we had to come up with a formula that will now begin to address the problem. But at least we will give a start in that direction.

The legislation which will be introduced shortly, in keeping with the second report regarding technology infrastructure, takes a slightly different tack. John Danforth—I know the Presiding Officer was familiar with former Senator Danforth from Missouri—Jim Murray, past president of Fannie Mae, and Dr. Mary Hatwood Futrell, past president of the National Education Association, joined forces today to address the problem highlighted in the second GAO report.

These three leaders in the area of education and finance came together today to establish the National Education Technology Funding Corp., as a private, nonprofit organization, dedicated to improving our Nation's education technology infrastructure.

The National Education Association, the National School Board Association, the American Library Association, and I strongly support this effort to link public schools and public libraries to the information superhighway. As outlined in its articles of incorporation—incorporated today in the District of Columbia—the National Education Technology Funding Corp. is specifically designed to, first, leverage resources and stimulate private investment in education technology infrastructure; second, provide loans, grants, and other forms of assistance to State education technology agencies, with due regard for providing a fair balance among types of school districts and public libraries assisted and the disparate needs of such school districts; third, encourage the development of education telecommunications and information technologies through public-private ventures, by serving as a clearinghouse for information on new education technologies, and by providing technical assistance; fourth, to establish criteria to encourage the States to create, maintain, utilize and upgrade interactive high-capacity networks capable of providing audio, visual, and data communications for elementary schools, secondary schools, and public libraries; to distribute resources to assure equitable aid to all elementary and secondary schools in the State and achieve universal access to network technology; and finally, to upgrade the delivery of instruction to students.

Mr. President, former Senator Danforth, Mr. Murray, and Mrs. Hatwood Futrell created the National Education Technology Funding Corp. because they recognized that States and local school districts need help financing education technology equipment and infrastructure improvements.

They also recognize the need for both public and private investments in our Nation's education technology infrastructure. That is why their corporation will be operated by a board of directors which will include five members representative of public schools and public libraries; five representatives of the State education agencies; and five members representative of the private sector.

INFORMATION SUPERHIGHWAY

Mr. President, President Clinton and Vice President GORE have also taken leadership roles in addressing our Nation's technology infrastructure needs. On the 15th of September, 1993, the information infrastructure task force created by the Vice President released its report, entitled ''National Information Infrastructure: Agenda for Action.''

That report identified nine principles for Government action to promote the information superhighway—the metaphor used to describe the evolving technology infrastructure that will link homes, businesses, schools, hospitals, and libraries to each other and to a vast array of electronic information resources.

On this same day, President Clinton issued Executive Order 12864 which created the National Information Infrastructure Advisory Counsel to facilitate private sector input.

Mr. President, a substantial portion of the information superhighway already exists. Approximately 94 percent of American households have telephone service, 60 percent have cable service, 30 percent have computers, and almost 100 percent have radio and TV. Local and long distance telephone companies are investing heavily in fiber optic cables that will carry greater amounts of information, cable companies are increasing their capacity to provide new services, and new wireless personal communications systems are under development. One prototype, which I am sure the chair has heard about, the Internet, connects 15 to 20 million people worldwide.

FEDERAL SUPPORT

Nonetheless, the results of the second GAO report suggest to me that the Federal Government must do more to build the education portion of the national information infrastructure.

Federal support for the acquisition and use of technology in elementary and secondary schools is currently fragmented, coming from a diverse group of programs and initiatives. Although the full extent to which the Federal Government currently supports investments in education technology at the precollegiate level is not known, the Office of Technology Assessment estimated in its report that the programs administered by the Department of Education provided $208 million for education technology in 1988.

COST OF TECHNOLOGY

There is little doubt that substantial costs will accompany efforts to bring information technologies into precollegiate education in any comprehensive fashion. In his written testimony before the House Telecommunications and Finance Subcommittee on September 30, 1994, Secretary of Education, Richard Riley, estimated that it will cost anywhere from $3 to $8 billion annually to build the education portion of the national information infrastructure. The Office of Technology Assessment has also estimated that the cost of bringing the students-to-computer ratio down to 3-to-1 would cost $4.2 billion a year for 6 years.

Mr. President, I will soon introduce legislation designed to help States and local school districts meet these costs by authorizing Federal departments and agencies to make grants to the National Education Technology Funding Corp.

Rather than creating another bureaucratic Federal program, this legislation would provide Federal support for education technology through the NETFC—an innovative, bipartisan, public-private partnership.

The seed money will help the NETFC provide low-interest loans, loan guarantees, grants, and other forms of assistance to States in order to help them improve their education technology infrastructures.

This legislation will not infringe upon local control over public education in any way. Rather, it will supplement, augment, and assist local efforts to support education technology in the least intrusive way possible, by helping local school boards and States improve their own facilities.

Mr. President, I ask unanimous consent that the GAO report be printed in its entirety in the RECORD.

The PRESIDING OFFICER. Without objection, it is so ordered.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

SCHOOL FACILITIES—AMERICA'S SCHOOLS NOT DESIGNED OR EQUIPPED FOR 21st CENTURY

U.S. GENERAL ACCOUNTING OFFICE,
HEALTH, EDUCATION, AND HUMAN SERVICES DIVISION,
Washington, DC, April 4, 1995.

Hon. CAROL MOSELEY-BRAUN, Hon. EDWARD M. KENNEDY, Hon. CLAIBORNE PELL, Hon. PAUL SIMON, Hon. PAUL WELLSTONE,
U.S. Senate.

A skilled workforce is necessary to increase productivity so that a society can maintain and enhance its standard of living. Therefore, education and future employment opportunities for our nation's children and teenager is a concern that transcends traditional geographic, economic, and political boundaries. Towards that end, in your letter of February 15, 1994, you requested information on the physical condition of the Nation's public elementary and secondary schools. We presented national-level information on the physical condition of the nation's school facilities in School Facilities: Condition of America's Schools (GAO/HEHS-

95–61 Feb. 1, 1995). In that report, on the basis of estimates by school officials in a national sample of schools, we estimated that the nation's schools need about $112 billion[1] to repair or upgrade America's multibillion dollar investment in school facilities to good overall condition.

In addition, you asked us to document the extent to which America's 90,000 schools are designed and equipped to meet the needs of today's students and tomorrow's workers. Specifically, can America's schools provide the key facilities requirements and environmental conditions for education reform and improvement? do America's schools have appropriate technologies, such as computers, and the facility infrastructure to support the new technologies? In short, do America's schools have the physical capacity to support learning into the 21st century?

To answer these questions, we surveyed a nationally representative stratified random sample of about 10,000 schools and augmented the survey with visits to 10 selected school districts. Our analyses otherwise noted, sampling errors do not exceed 2 percent. (See app. VI for a discussion of methodology.) We conducted our study between January 1994 and March 1995 in accordance with generally accepted government auditing standards.

RESULTS IN BRIEF

School officials in a national sample of schools reported that although most schools meet many key facilities requirements[2] and environmental conditions[3] for education reform and improvement, most are unprepared for the 21st century in critical areas:

Most schools do not fully use modern technology. Although at least three-quarters of schools report having sufficient computers and televisions (TV), they do not have the system or building infrastructure to fully use them. Moreover, because computers and other equipment are often not networked or connected to any other computers in the school or the outside world, they cannot access the information super highway.

Over 14 million students attend about 40 percent of schools that reported that their facilities cannot meet the functional requirements of laboratory science or large-group instruction even moderately well.

Over half the schools reported unsatisfactory flexibility of instructional space necessary to implement many effective teaching strategies.

Although education reform requires facilities to meet the functional requirements of key support services—such as private areas for counseling and testing, parent support activities, social/health care, day care and before- and after-school care—about two-thirds of schools reported that they cannot meet the functional requirements of before- or after-school care or day care.

Moreover, not all students have equal access to facilities that can support education into the 21st century, even those attending school in the same district. Overall, schools in central cities and schools with a 50-percent or more minority population were more likely to have more insufficient technology elements and a greater number of unsatisfactory environmental conditions—particularly lighting and physical security—than other schools.

BACKGROUND

Education Reform.—Education reform is a national movement to raise standards for all students at all schools. It focuses on changes designed to improve student outcomes by (1) determining what students should know and be able to do and (2) ensuring that the key components of the educational system are directed to achieving those outcomes.[4] To accomplish these objectives, education reform efforts are introducing new teaching methods, assessments, curricula, instructional materials, and technology into school buildings.

To improve instruction, reform advocates recommend that a school use new techniques for teaching and evaluating students and involve teachers in developing curricula, redesigning instruction, and planning staff development. To help achieve desired educational outcomes, advocates also recommend that schools enlist parents to monitor their children's progress and participate in school activities, in part by volunteering as tutors and acting as teacher aides. Finally, to further ensure the success of educational reform, advocates recommend that schools help provide health and social services to students as well as before- and after-school care and day care.[5]

For example, when teachers evaluate students in new ways, they need space to display and store student projects and journals. Likewise, changes in instructional programs or techniques—such as adopting an ungraded primary system or creating a school-within-a-school—require space for large-group and small-group instruction. Adding an all-day kindergarten, extended-day programs, or even new computer courses[6] also call for special or dedicated space. Therefore, school facilities that can support education reform activities and communications technologies will not resemble or operate as schools built in the 1950s.

Rather than uniform-sized classrooms with rows of desks, a chalkboard, and minimal resources such as textbooks and encyclopedias, schools prepared to support 21st century education would have: Flexible space, including space for small- and large-group instruction; space to store and display alternative student assessment materials; facilities for teaching laboratory science, including demonstration and student laboratory stations, safety equipment, and appropriate storage space for chemicals and other supplies; and a media center/library with multiple, networked computers to access information to outside libraries and information sources.

In addition, such schools would also have space for a variety of support activities: private areas for student counseling and testing and for parent support activities, such as tutoring, planning, making materials, and the like; social and health care services; day care; and before- and after-school care.

Schools would also have the capacity to operate year round, 24-hours per day if necessary, providing a safe and well-lit environment with satisfactory heating, air-conditioning, ventilation, and air quality and with appropriate acoustics for noise control. In addition, schools would have enough high-quality computers, printers, and computer networks for instructional use; modems; telephone lines for modems and telephones in instructional areas; TVs; laser disk players/video cassette recorders (VCR); cable TV; fiber optic cable; conduits/raceways for computer and computer network cables; electric wiring; and power for computers and other communications technology.[7] Networking capability in the classroom allows for use of a wide range of teaching and learning strategies that are not possible with stand-alone computers. For example, networks allow: Groups of students simultaneous access to large data sources; students to communicate with each other and with teachers in their own school, and with teachers and students in other schools; and teachers to interact with students by computer as students work—engaging in online dialogs, referring to additional resources—or students to engage in group projects.

Communications Technology in Schools.—Although technology is changing constantly and quickly becoming defined by complex interactive and multimedia[8] technologies and standards are only beginning to emerge,[9] it is helpful to regard school communications technology as comprising four basic electronic systems: technology infrastructure, data, voice, and video. These systems transmit data—by computer networks, voice—by phone lines, and video—by TV within the school, among different school buildings, to the outside world, and even to outer space.

Technology Infrastructure.—Of the four systems, technology infrastructure may be the most important and least understood. Data, voice, and video systems cannot operate without the supporting building or system infrastructure. Building infrastructure consists of what needs to be built into the facility to make any technology operate effectively in the school: the conduits/raceways through which computer and computer network cables are laid in the school, the cables and electrical wiring for computers and other communications technology, and the electrical power and related building features such as electric outlets. Although designing a new building with this infrastructure included is relatively easy and inexpensive, installing it in existing school buildings can be expensive and disruptive.

The other type of infrastructure—system infrastructure—links up various technology components. For example, computer network infrastructure consists of the software that runs the networking function. It links all computers in a class or in the school or the computers in the school with computers in the outside world—as well as special pieces of hardware such as severs (computers with large information storage capabilities that allow many users to share information) whose purpose is to run the network. Besides the network infrastructure, modems—small electrical devices that allow computers to communicate with each other through the phone lines—are another basic component of systems infrastructure that links data, voice, video, and even multimedia systems.

This technology infrastructure, although initially more costly than the basic computer/printer, may have substantially more value. Educationally, it can link even the most remote or poor school with vast resources, including the finest libraries and the best teachers, for a wide range of courses or course enhancements, such as ''virtual'' field trips. Financially, according to the North Central Regional Educational Laboratory, the Internet and the emerging video and imaging technologies could be used to change the economic basis of schooling by drawing upon the free or low-cost resources and services to replace textbooks and other costly instructional materials, software, and other programs. Those funds could then be used for additional staffing, local curriculum development, developing technology staff, ongoing local staff development, and the like.[10]

Data Systems.—Basic data systems include computers, some with compact disk read-only memory (CD–ROM) capability, connected to printers. A baseline data system enables instructional computers to communicate with similar devices in the classroom or the school (local area networks). Optimally, a data system also includes computer networks compatible with outside resources (wide area networks) such as the Internet;[11] computers in the central office, in other schools, and home computers; and databases from the Department of Education or Library of Congress.

[1] Footnotes at end of article.

Voice Systems.—Voice systems include accessible two-way voice communication and messaging (telephone) systems for staff members to communicate with each other in the building and with the school community. A baseline system includes a public address system, some outgoing lines and telephones serving school offices and staff members, and incoming lines to meet community and administrative needs. Optimally, it also includes more outgoing and incoming lines and sufficient capacity to allow for such developing technologies as voice processing and voice mail.

Video Systems.—Video systems provide accessibility to television communication and all forms of video transmission from school locations as well as from the outside. A baseline system includes capability to receive instructional and teacher professional programming as well as commercial and public television stations whether through a master antenna or cable, microwave, or satellite. An optimal system with today's technology also includes capability in classrooms and teachers' offices to dial up video sources in the school media center and to conduct two-way video-interactive classes between classrooms, inside the school, and between schools.

Only a Few Schools Have State-of-the-Art Communications Technology.—Today new schools are being designed with these changes in mind. Yet we only have a handful of schools—mainly science high schools like Stuyvesant High School in New York City or Thomas Jefferson High School in Virginia—that model state-of-the-art communications technologies. However, to prepare the nation's children and teenagers to be competitive workers in the 21st century, experts and business leaders say modern communication technologies should be part of America's elementary and secondary education, not just the sole province of a few schools.

An example of state-of-the-art technology can be found in the new Stuyvesant High School. Serving about 3,000 students, it has over 400 computers, most of which are arranged in 15 networks, with access to the Internet, as well as four antennae on the roof to communicate with satellites and virtually anyone else in the outside world. This school can directly access the latest information from the most sophisticated scientific satellites and participate in interactive ''classes'' with scientists in the field in the Amazon rain forest via interactive, multimedia networks like the JASON Project. This allows the students to talk with these scientists and observe them and the rain forest on their TV screens during class, allowing them to go on ''virtual'' field trips worldwide.

Federal Legislation Supports Reform and Technology.—Recent federal legislative initiatives supporting education reform and technology include (1) Improving America's Schools Act of 1994, which authorized $200 million for technology education for 1995 and an additional $200 million for the new education infrastructure improvement grants; and (2) Goals 2000: Educate America Act, passed in 1994, which establishes an Office of Educational Technology in the Department of Education. Goals 2000 requires sates that wish to receive funding under the statute to develop a state improvement plan for elementary and secondary education. This plan should include a systemic statewide plan to increase the use of state-of-the-art technologies that enhance elementary and secondary student learning and staff development to support the National Education Goals and state content standards and state student performance standards. Central to both these acts is the idea that children are entitled to an opportunity to acquire the knowledge and skills contained in these standards, often referred to as ''opportunity to learn.''[12] Figure 1 depicts various school facilities around the country. [Figure 1 not reproducible in RECORD.]

Most Schools Have Computers and TVs but Little Infrastructure to Fully Use Technologies.—Over three-quarters of the schools reported having sufficient computers and TVs. Two-thirds reported having sufficient printers, laser disk players/VCRs,[13] and cable TV. However, school officials reported that about 10.3 million students in about 25 percent of the schools do not have sufficient computers. Although most schools report having enough computers and other basic technology elements,[14] they do not have the technology infrastructure to fully use them. (See fig. 2 and table 1.) [Figure 2 not reproducible in RECORD.]

TABLE 1—MILLIONS OF STUDENTS ATTEND SCHOOLS REPORTING INSUFFICIENT CAPABILITY TO SUPPORT TECHNOLOGY

Technology element	Percent of schools	Number of schools	Number of students affected (in millions)
Fiber optics cable	86.8	66,000	35.4
Phone lines for instructional use	61.2	47,000	24.8
Conduits/raceways for computer/computer network cables	60.6	46,600	24.9
Modems	57.5	44,200	23.0
Phone lines for modems	55.5	42,700	22.5
Computer networks for instructional use	51.8	40,100	20.7
Electrical wiring for computer/communications technology	46.1	35,700	19.3
Electrical power for computers/communications technology	34.6	26,800	14.5
Laser disk player/VCR	33.5	25,700	13.5
Cable TV	31.7	24,200	12.2
Computer printers for instructional use	29.3	22,700	11.9
Computers for instructional use	25.2	19,500	10.3
TVs	15.9	12,200	6.8
Schools reporting six or more insufficient technology elements	51.9	40,400	21.3

Even in schools reporting enough computers, over one-third reported insufficient electrical wiring for computers/communications technology. Computers and other equipment that are not networked or capable of communicating with anything else in the school or in the outside world may be sufficient for basic or reinforcement activities. They are limited, however, in their access to the vast amount of electronic information available and do not allow for new information to come into the system or for the interaction between students, students and teachers, or the school and the outside world.

Over half of America's schools reported insufficient capability in modems, phone lines for modems, phone lines for instruction, conduits/raceways, and fiber optics. (See table 1 and, for more detail, tables III.1 and III.2 in app. III.)

The following details emerged from the survey: In central cities, over 60 percent of schools reported insufficient networks, modems, phone lines (for modems or instruction), conduits, and fiber optic cables. Over half reported insufficient capability for electrical wiring for computer technology. (For more detail, see table III.4 in app. III.)

Regional analyses show that schools in the West reported the least sufficient technology. (For more detail, see table III.7 in app. III.)

Schools with inadequate buildings[15] also were more likely to report insufficient capability to support technology. In every area of communications technology we asked about, schools with no inadequate buildings reported greater sufficiency than schools with one or more inadequate buildings. However, even in schools reporting no inadequate buildings, about one-half or more reported insufficient capability in areas related to interconnectivity, such as networks, modems, and fiber optics.

Site visits supported the survey results:

In Ramona, California, we learned that some schools needed to retrofit wiring to increase power for more demanding technologies; one elementary school had only two outlets in each classroom. Moreover, if four teachers used their outlets at the same time, the circuit breakers tripped. This happened about once a month.

A school official in Montgomery County, Alabama, said that new electrical systems to accommodate computers and other technologies were the most common renovation needed in schools.

In our site visit to Washington, D.C., officials told us that while many schools have computer laboratories with new computer equipment, these will need upgraded electrical systems, lighting, and air-conditioning to provide an adequate learning environment.

In one school we visited in Chicago, computers were still in boxes because the school did not have sufficient power and outlets to use them.

In looking at the uses of bond proceeds in the districts, on average, school officials reported that only 8 percent of the most recently passed bond was spent for purchase of computers and telecommunications equipment. That is, for the average $6.5 million bond issue, about $155,600 or 2 percent was provided for the purchase of computers and about $381,100 or 6 percent for the purchase of telecommunications equipment. (See app. II.)

Selected respondent comments.—''Our building, built in 1948, was wired for a filmstrip projector.''

''We live in a state where we put more technology and safety in an automobile than we do in our schools.''

''We are not ready to join the information network proposed by Vice President Gore.''

''Our computers are mostly donated. What few we purchased were bought in 1984—the kids laugh at them, they have better at home.''

''The number of computers in the buildings is limited, and we currently have one computer bus serving all six elementary schools. The time for students to spend on the computers is obviously limited.''

''Facility adaptation for computer networks, video networks, and phone access is expensive and makes justifying purchase of computer hardware more difficult.''

SCHOOLS REPORTED LACKING KEY FACILITIES REQUIREMENTS FOR EDUCATION REFORM

When asked how well their buildings meet the functional requirements of specified activities related to school reform and improvement, many survey respondents reported that they met these requirements ''not well at all.'' (See table 2.) For example, although 58 percent of schools reported meeting the functional requirements of laboratory science at least somewhat well, in fact, about 14.6 million students are in the 42 percent of schools where officials report that the facilities requirements for laboratory science are met not well at all (see fig. 3 and table 2).

[Figure 3 not reproducible in RECORD.]

TABLE 2: MILLIONS OF STUDENTS ATTEND SCHOOLS REPORTING THEY MEET THE FUNCTIONAL REQUIREMENTS OF SOME KEY EDUCATION REFORM ACTIVITIES NOT WELL AT ALL

Activity	percent of schools	Number of schools	Number of students affected (in millions)
Instructional activities:			
Laboratory science	42.0	32,100	14.6
Large-group instruction	38.2	29,500	14.3

TABLE 2: MILLIONS OF STUDENTS ATTEND SCHOOLS REPORTING THEY MEET THE FUNCTIONAL REQUIREMENTS OF SOME KEY EDUCATION REFORM ACTIVITIES NOT WELL AT ALL—Continued

Activity	percent of schools	Number of schools	Number of students affected (in millions)
Storage of student assessment materials	31.3	24,000	12.9
Display student assessment materials	27.6	21,200	11.1
Library/media center	13.4	10,400	4.2
Small-group instruction	9.5	7,300	3.7
Support activities:			
Day care	77.5	55,900	29.0
Before/after school care	58.8	43,100	22.4
Social/health care services	27.0	20,900	10.5
Private areas for counseling and testing	25.7	19,900	10.1
Parent support activities	23.5	18,200	9.7
Teacher planning	13.1	10,200	5.1

Note: Survey respondents rated the ability of their school facilities to meet the functional requirements of key education reform activities on the following scale: very well, moderately well, somewhat well, and not well at all.

Only seven states—District of Columbia, Georgia, Indiana, New Jersey, New Mexico, Pennsylvania, and Texas—had 20 percent or more of their schools meeting at least somewhat well the functional requirements for some educational reform and improvement activities. While 40 states reported that 50 percent or more of their schools had three or more specified requirements that they met not well at all, 5 states—Arkansas, California, Maine, Ohio, and Rhode Island—reported 70 percent or more of their schools in this condition. (For more detail, see tables IV.1 and IV.2 in app. IV.)

Nationwide, 42 percent of schools reported that their buildings met the functional requirements of laboratory science not well at all, affecting 14.6 million students. Forty-three states reported that one-third or more of their schools met functional requirements for laboratory science not well at all. Eight states—Alaska, California, Delaware, Maine, Nevada, Ohio, Oregon, and Washington—reported that 50 percent or more of their schools were in this condition. (For more detail, see table IV.3 in app. IV.)

Nearly four out of five schools nationwide reported that they could not meet at all well the functional requirements of day care. (See fig. 3.) Forty-five states reported that two-thirds or more of their schools were in this condition. (For more detail, see table IV.3 in app. IV.)

Nationwide, about three out of five schools reported that they met the functional requirements of before- and after-school care not well at all. Forty-eight states reported that one-third or more of their schools were in this condition.

About two out of five schools nationwide reported that they met the functional requirements of large-group instruction not well at all, a condition affecting 14.3 million students. Thirty states reported that one-third or more of their schools were in this condition. Four states—Alaska, California, Kansas, and Nebraska—reported over half their schools in this condition. (For more detail, see table IV.1 in app. IV.)

These problems were also demonstrated on our site visits:

Officials in Chicago told us that only one-fourth of Chicago's schools have properly equipped science laboratories, with water, power, gas, vacuum, and appropriate mechanisms for air and waste removal.

At the high school in Raymond, Washington, officials said that they need flexible space for large- and small-group instruction. Science classes have outdated equipment, and reading areas in the media center are noisy and poorly lighted. Officials also say they desperately need a day care center to keep young women with babies in school.

In New Orleans, officials told us that most secondary schools lack science laboratories that meet current safety needs, such as adequate air circulation, ventilation, emergency shut-offs for gas and electricity, emergency eye washes, and showers.

Selected Respondent Comments.—''These schools, as others over thirty years of age, while well-maintained, cannot provide the type and variety of instructional space necessary for the education programs of the 21st century without major renovations.''

''The buildings were built for twenty-five students per class with no extra rooms, no small and/or large group areas, and no planned storage space. Consequently, the facilities are certainly not conducive to new or different class size configurations or lesson delivery formats.''

Most Schools Report Most Environmental Conditions Satisfactory, but Problems Remain.—Overall, most school officials reported satisfaction with most environmental factors associated with learning.[16] (See table 3.) However, 22 millions students are in 53.9 percent of the schools that reported that their instructional space flexibility was unsatisfactory. Rates of unsatisfactory environmental conditions tend to be higher in schools where over 40 percent of the students are approved to receive free or reduced lunch, where over 50 percent of the students are minority students, in schools in the West. (See app. V.)

TABLE 3: MILLIONS OF STUDENTS ATTEND SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL CONDITIONS

Environmental factor	Percent of schools	Number of schools	Number of students affected (in millions)
Acoustics for noise control	28.1	21,900	11.0
Ventilation	27.1	21,100	11.6
Physical security of buildings	24.2	18,900	10.6
Heating	19.2	15,000	7.9
Indoor air quality	19.2	15,000	8.4
Lighting	15.6	12,200	6.7

Air-conditioning is no longer a luxury for schools if they want to effectively operate in hot weather or use computers. Moreover, in recent years, researchers have pointed to a relationship—although inconclusive—between certain environmental conditions and student learning.[17] In particular, air-conditioning has been cited as affecting learning. Of those schools noting that they had air-conditioning, 15.4 percent (6,000 schools) reported unsatisfactory air-conditioning, affecting about 4.2 million students.

The majority of schools reported that they were satisfied with their air-conditioning, although only half of the schools responding to our survey reported that they had air-conditioning in classrooms. The geographic patterns of air-conditioning in classrooms generally follow climate patterns. (For more detail, see fig. V.1 in app. V.) Three-quarters of schools reported that they had air-conditioning in their administrative areas. Only three states—New York, Oregon, and Rhode Island—indicated that over a third of their schools had unsatisfactory air-conditioning in their classrooms.

We found examples of problems caused by unsatisfactory air-conditioning in our site visits. In New Orleans, nearly half of the schools have no air-conditioning, despite the average relative humidity in the morning of 87 percent. Faced with a similar situation in Richmond, Virginia, school officials told us that students with asthma get sick from the heat; schools close early in the hot fall and spring months, decreasing instructional time.

SELECTED RESPONDENT COMMENTS

''Our school district facilities are currently meeting the needs of our students. We have not been impacted by population growth, lawsuits, or other major problems that would force our resources in other areas. Due to conservative spending practices by our school board and adequate funding by the state of Wyoming in the past decade, we have adequate carryover to provide needs without asking for state assistance or a bond issue.''

''Building design in the 1950s and 60s did not include air-conditioning or even windows that opened for schools, thus much renovation is needed in our district.''

''The middle school is depressing when you walk into it. We are having to use gym dressing rooms as regular classrooms.''

''The appearance and condition of school buildings is an important factor in positively influencing urban students. The continued neglect of the public school infrastructure at both state and federal levels continues to subject our students and staff to conditions which do not ensure their welfare and safety.''

BEST AND WORST SCHOOLS SOMETIMES FOUND IN SAME DISTRICT

Although some children have access to facilities that can support education in the 21st century, many do not. Schools differ dramatically, even in the same district. Our site visits revealed that the ability of school facilities to support education reform ranges widely. Because of the need to ease overcrowding in some areas, schools are constantly being built, even in impoverished cities. These new schools are generally equipped to implement education reform and improvement activities. However, with construction of new facilities taking priority over maintaining and renovating current buildings, gross inequalities may result in the same school district. For example, in Pomona, California, officials told us that to be ready for education in the 21st century, Pomona's older schools need additional wiring and outlets to use new technology and facilities for large-group instruction, storage of student assessment materials, social and health services, teachers' planning areas, and the like. In contrast, the newest school has a satellite dish, an electrical system built to handle anticipated technology, collapsible walls that facilitate team teaching or small-group instruction, enormous amounts of storage space, and large amounts of space for a variety of services and activities.

CONCLUSIONS

Many education reformers say that holding students to nationwide standards is unfair if they have not had an equal—or roughly equal—opportunity to learn. If schools cannot provide students with sufficient technological support or facilities for instruction and services, they may not be providing even a roughly equal opportunity for all students to learn. This is particularly true in central cities and in schools that serve high percentages of minority and poor students.

Far from the high-tech world of interactive media and virtual reality, many of our schools are wired for no more than filmstrip projectors. As one respondent commented,

''We need technology in the schools and teachers who can use the equipment. The percentage of teachers who can use computers is abysmally low, yet computers only scratch the surface of technology that should be available to all students, not just those who live in affluent areas. Interactive TV and telecommunications is a must in all schools, yet the cost of this technology remains prohibitively high for most small

schools. For those schools who can afford it, the cost of training teachers to use it drives the costs up further.''

In short, most of America's schools do not yet have key technologies or the facilities required to support learning into the 21st century. They cannot provide key facilities requirements and environmental conditions for education reform and improvement. In particular, older, unrenovated schools need infrastructure renovation to support technology. These renovations include fundamental changes to building structure, wiring and electrical capacity, air-conditioning and ventilation, and security.

AGENCY COMMENTS

We spoke with officials at the Department of Education who reviewed a draft of our report and incorporated their comments as appropriate. We did not ask for formal agency comments since this report does not review any department programs.

We are sending copies of this report to appropriate House and Senate committees and other interested parties. Please call Eleanor L. Johnson if you or your staff have any questions. Major contributors to this report are listed in appendix VIII.

LINDA G. MORRA,
Director, Education and Employment Issues.

APPENDIX I—PROJECT ADVISERS

The following individuals advised this report either by (a) serving on our expert panel on January 31, 1994; (b) helping with the development of our questionnaire; or (c) reviewing a draft report.

Allen C. Abend,[a, b, c] Chief, School Facilities Branch, Maryland State Department of Education.

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William M. Wilder,[b] Director, Department of Facilities Management, Board of Education of Montgomery County (Maryland).

APPENDIX II—RELEVANT SURVEY ITEMS WITH OVERALL PERCENT RESPONSE

17. Do this school's on-site buildings have sufficient capability in each of the communications technology elements listed below to meet the functional requirements of modern educational technology? *Circle one for EACH element listed.*

Technology elements	Percent of schools— Very sufficient	Moderately sufficient	Somewhat sufficient	Not sufficient
Computers for instructional use (N=77,400)	11.1	30.6	33.1	25.2
Computer printers for instructional use (N=77,412)	9.7	27.9	33.1	29.3
Computer networks for instructional use (N=77,350)	8.8	18.3	21.2	51.8
Modems (N=76,951)	4.9	14.0	23.6	57.7
Telephone lines for modems (N=76,986)	6.9	13.7	23.9	55.5
Telephones in instructional areas (N=76,827)	7.5	12.6	18.8	61.2
Television sets (N=77,211)	19.8	33.7	30.7	15.9
Laser disk players/VCRs (N=76,819)	7.7	25.4	33.5	33.5
Cable television (N=76,459)	20.1	25.9	22.3	31.7
Conduits/raceways for computer/computer network cables (N=76,987)	7.4	11.9	20.1	60.6
Fiber optic cable (N=76,015)	3.5	4.3	5.5	86.8
Electrical wiring for computers/communications tecyhnology (N=77,437)	7.8	17.7	28.4	46.1
Electrical power for computers/communications technology (N=77,414)	12.4	24.3	28.7	34.6

18. How many computers for instructional use does this school have? *Include computers at both on-site buildings and off-site instructional facilities.*

_____ computers for instructional use: Range 0–1800; Mean 50.7; Median 37.0.

19. How well do this school's on-site buildings meet the functional requirements of the activities listed below? *Circle one for EACH activity listed.*

Activity	Percent of schools— Very well	Moderately well	Somewhat well	Not well at all
Small group instruction (N=77,606)	32.4	37.5	20.7	9.5
Large group (50 or more students) instruction (N=77,178)	10.7	24.4	26.7	38.2
Storage of alternative student assessment materials (N=77,058)	7.8	24.2	36.7	31.3
Display of alternative student assessment materials (N=76,797)	7.9	26.6	37.9	27.6
Parent support activities, such as tutoring, planning, making materials, etc. (N=77,496)	12.3	29.7	34.5	23.5
Social/Health Care Services (N=77,456)	10.8	30.1	32.1	27.0
Teachers' planning (N=77,397)	20.6	37.4	28.9	13.1
Private areas for student counseling and testing (N=77,530)	14.6	28.4	31.3	25.7
Laboratory science (N=76,344)	11.2	21.4	25.4	42.0
Library/Media Center (N=77,701)	24.9	35.3	26.5	13.4
Day care (N=72,083)	4.3	7.9	10.3	77.5
Before/after school care (N=73,335)	6.8	15.3	19.2	58.8

20. How satisfactory or unsatisfactory is each of the following environmental factors in this school's on-site buildings? Circle one for EACH factor listed.

Environmental factor	Percent of schools— Very satisfactory	Satisfactory	Unsatisfactory	Very unsatisfactory
Lighting (N=78,158)	22.2	62.2	13.2	2.4
Heating (N=77,999)	18.1	62.7	14.8	4.4
Ventilation (N=77,929)	14.6	58.3	20.9	6.2
Indoor air quality (N=77,958)	14.3	66.5	15.0	4.2
Acoustics for noise control (N=78,030)	10.4	61.5	22.7	5.4
Flexibility of instructional space (e.g., expandability, convertability, adaptability) (N=77,472)	7.0	39.0	36.6	17.3
Energy efficiency[1] (N=77,725)	9.9	48.9	30.4	10.8
Physical security of buildings (N=77,883)	13.8	62.0	17.7	6.6

[1] This environmental factor will be discussed in detail in a future report.

21. Does this school have air conditioning in classrooms, administrative offices, and/or other areas? *Circle ALL that apply.* (N=79,454)

	Percent of Schools
Yes, in classrooms	51.2
Yes, in administrative offices	72.8
Yes, in other areas	50.7
No, no air conditioning in this school *at all*	21.2

GO TO QUESTION 23

22. How satisfactory or unsatisfactory is the air conditioning in classrooms, administrative offices, and/or other areas? *Circle one for EACH CATEGORY listed.*

Air conditioning in	Percent of schools Very satisfactory	Satisfactory	Unsatisfactory	Very unsatisfactory
Classrooms (N=39,717)	23.6	61.0	12.4	3.0
Administrative Offices (N=56,806)	22.4	64.4	11.3	1.9
Other areas (N=38,657)	22.9	62.3	11.6	3.1

7. What was the total amount of this most recently passed bond issue?

Mean=$6,556,000.00.

8. How much money did this most recently passed bond issue provide for the items listed below? *Enter zero if none.*

Items	*Amount provided per school (mean)*
Construction of new schools	$3,706,700
Repair/renovation/modernization of existing schools	2,733,000
Asbestos removal	109,900
Removal of Underground Storage Tank (USTs)	13,700
Removal of other environmental conditions	16,700
Purchase of computers	155,600
Purchase of telecommunications equipment	381,100
Access for students with disabilities	98,300

APPENDIX III—DATA—TECHNOLOGY ELEMENTS

TABLE III.1: MAJORITY OF STATES REPORT THAT AT LEAST 50 PERCENT OF SCHOOLS HAVE SIX OR MORE INSUFFICIENT TECHNOLOGY ELEMENTS

Percent of schools with six or more insufficient technology factors	States
20–29	Nevada, South Dakota.
30–39	Arkansas, Iowa, Kentucky, Minnesota, North Dakota, Pennsylvania, Texas, Wyoming.
40–49	Arizona, Colorado, Georgia, Indiana, Kansas, Mississippi, Montana, Nebraska, New Jersey, West Virginia, Wisconsin.
50–59	Alaska, Connecticut, District of Columbia, Florida, Louisiana, Maryland, Missouri, New York, Oklahoma, South Carolina, Tennessee, Utah, Vermont, Virginia.
60–69	Alabama, California, Idaho, Illinois, Massachusetts, Maine, Michigan, North Carolina, New Hampshire, Oregon, Rhode Island, Washington.
70–79	Delaware, Hawaii, New Mexico, Ohio.

Note.—Sampling errors range +7.1–13.5 percent.

TABLE III.2: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS—DATA, VOICE, SYSTEMS INFRASTRUCTURE—BY STATE

State	Computers	Printers	Networks	Modems	Phone lines for modems	Phone lines instructional area
Alabama	32.1	36.3	58.6	61.7	55.4	64.1
Alaska	35.5	36.2	56.4	56.9	53.8	60.9
Arizona	15.8	18.3	46.4	60.8	58.1	61.8
Arkansas	9.5	17.5	36.7	63.7	56.4	59.3
California	37.1	39.7	69.8	70.5	68.1	64.8
Colorado	a20.9	a23.9	a37.0	61.6	56.8	45.3
Connecticut	a26.5	a29.9	a63.6	a55.4	a51.9	a52.7
Delaware	b44.5	b52.7	b65.7	a83.0	a82.9	a82.4
District of Columbia	a22.0	a31.4	a37.1	b49.5	b52.7	b52.6
Florida	28.6	28.9	66.4	65.0	63.2	62.3
Georgia	11.6	13.7	33.9	48.0	53.0	71.7
Hawaii	39.0	a44.7	72.0	75.7	79.5	74.7
Idaho	25.3	31.6	55.9	63.9	58.8	72.1
Illinois	30.2	39.0	57.7	65.7	63.4	64.2
Indiana	16.5	18.3	42.1	50.7	55.0	58.2
Iowa	15.3	16.5	43.5	48.5	43.8	55.4
Kansas	22.9	27.7	44.0	47.3	44.4	61.7
Kentucky	13.1	19.8	35.5	57.2	55.7	67.2
Louisiana	31.6	38.6	62.5	59.5	65.5	78.7
Maine	a31.0	a31.8	a62.9	a69.6	a63.8	a69.4
Maryland	29.1	30.4	44.1	62.3	66.7	87.0
Massachusetts	a32.5	a43.1	70.4	71.1	66.9	71.9
Michigan	36.9	38.8	63.3	64.1	58.1	63.4
Minnesota	22.5	21.7	41.5	42.7	41.0	41.4
Mississippi	16.9	20.3	37.6	53.8	55.8	62.7
Missouri	23.3	32.8	52.4	60.5	59.1	65.4
Montana	17.1	19.0	47.5	46.8	37.5	53.2
Nebraska	11.2	10.1	a43.3	a55.5	a45.7	a44.4
Nevada	14.4	15.9	26.9	28.2	26.2	27.1
New Hampshire	a44.0	a42.9	a65.6	68.4	a58.6	a66.4
New Jersey	20.0	24.5	a41.8	a38.1	33.5	62.9
New Mexico	36.3	44.9	69.6	79.0	58.5	57.3
New York	20.2	24.2	44.0	48.9	55.3	57.9
North Carolina	30.1	33.3	51.1	62.2	62.6	73.8
North Dakota	17.3	19.8	36.7	40.2	36.5	46.9
Ohio	38.2	50.7	71.8	74.0	70.5	76.2
Oklahoma	22.9	33.0	50.8	63.4	57.7	60.0
Oregon	38.2	41.8	66.2	59.8	65.1	65.6
Pennsylvania	18.2	19.4	a50.2	a54.7	a44.2	a48.7
Rhode Island	a37.1	a42.7	a49.3	a67.3	a52.1	67.3
South Carolina	33.0	35.1	56.1	55.2	50.3	61.5
South Dakota	9.8	9.9	37.0	37.0	35.4	42.0
Tennessee	20.4	22.8	48.0	62.7	65.6	68.6
Texas	12.8	15.6	31.3	38.9	38.4	44.0
Utah	6.9	7.9	28.7	54.4	71.0	77.5
Vermont	b32.7	b31.7	a65.7	b55.9	b61.4	b56.1
Virginia	31.3	37.7	56.5	54.1	52.9	56.0
Washington	32.0	39.8	60.5	61.8	61.1	66.3
West Virginia	16.5	17.2	32.3	56.8	51.5	71.8
Wisconsin	22.4	24.5	44.6	45.4	46.4	58.9
Wyoming	9.8	13.2	32.7	a41.4	33.8	44.5

Note.—Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript ''a'' have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript ''b'' have sampling errors equal to or greater than 13 percent but less than 16 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE III.3: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS—VIDEO AND BUILDING INFRASTRUCTURE—BY STATE

State	Television	Laser disk player/VCR	Cable TV	Conduits	Cable	Wiring	Power
Alabama	15.0	34.6	33.3	61.9	74.8	44.1	33.9
Alaska	35.3	46.3	55.6	67.4	90.9	52.1	44.7
Arizona	16.8	23.1	30.4	56.0	83.5	36.3	27.6
Arkansas	6.6	21.6	12.6	43.1	85.1	34.1	19.8
California	21.0	41.2	49.9	79.7	92.8	69.1	55.6
Colorado	16.9	a 29.7	28.8	a 49.7	88.2	a 38.5	a 32.7
Connecticut	25.1	a 35.0	a 42.4	a 62.9	91.3	a 55.1	a 41.2
Delaware	b 32.8	b 60.9	b 45.4	a 76.9	93.3	b 69.5	b 48.8
District of Columbia	a 21,6	a 31.4	a 25.6	b 50.0	b 58.0	b 45.8	b 41.4
Florida	8.6	28.9	19.7	67.6	88.0	64.3	41.9
Georgia	14.8	28.8	12.9	57.8	87.1	44.0	38.3
Hawaii	4.7	29.8	18.8	82.1	89.7	75.1	61.4
Idaho	23.0	44.5	42.7	72.3	91.0	51.2	36.8
Illinois	23.3	43.7	43.4	68.8	87.0	52.6	41.1
Indiana	12.9	24.0	27.1	52.3	82.9	43.1	32.0
Iowa	4.5	21.0	13.2	49.9	84.9	31.3	15.4
Kansas	17.9	34.9	31.2	57.3	89.0	40.7	33.6
Kentucky	3.2	23.2	8.0	49.8	75.2	35.8	25.1
Louisiana	18.4	40.4	42.7	61.6	87.7	47.2	38.6
Maine	19.7	a 43.7	a 46.2	72.6	94.0	a 46.7	a 35.0
Maryland	36.2	52.1	38.5	61.9	91.8	46.8	36.0
Massachusetts	a 34.9	a 48.0	a 44.2	73.9	88.1	60.8	a 49.4
Michigan	27.1	42.1	27.1	68.7	85.6	51.0	38.3
Minnesota	17.3	31.6	27.4	48.9	72.3	7.4	25.2
Mississippi	4.9	36.7	32.5	55.6	85.0	26.6	19.9
Missouri	6.6	26.0	17.3	53.2	87.9	33.7	26.0
Montana	14.6	25.4	42.0	62.1	81.7	38.8	24.9
Nebraska	1.7	12.5	a 31.0	62.4	83.3	33.1	21.2
Nevada	4.1	13.9	14.8	43.6	78.2	28.4	25.1
New Hampshire	a 27.4	a 43.7	a 26.8	69.4	88.8	a 57.7	a 35.8
New Jersey	11.2	24.9	32.5	a 55.2	85.8	a 41.2	34.2
New Mexico	15.4	54.8	51.6	77.3	87.1	48.5	42.1
New York	24.7	38.1	35.9	55.5	82.3	50.7	34.7
North Carolina	15.2	30.9	24.5	66.0	92.3	55.4	41.8
North Dakota	15.1	30.9	27.5	56.0	69.5	33.8	17.7
Ohio	16.0	44.1	31.3	76.6	95.0	63.0	50.6
Oklahoma	18.8	35.2	32.8	54.6	81.7	41.4	32.3
Oregon	29.9	35.6	23.3	68.0	87.6	56.0	33.7
Pennsylvania	13.9	a 34.7	27.4	a 41.0	86.6	32.2	17.4
Rhode Island	24.4	a 41.0	17.3	74.0	90.8	a 64.2	a 45.0
South Carolina	5.6	25.3	29.8	62.9	87.1	41.1	33.2
South Dakota	7.8	22.4	13.6	43.3	69.7	22.9	14.6
Tennessee	6.9	37.1	27.1	58.0	94.3	38.8	25.4
Texas	8.7	17.0	31.6	46.0	83.0	28.6	22.3
Utah	4.8	22.1	39.4	55.3	93.3	38.8	26.7
Vermont	10.0	b 38.1	b 57.8	a 69.3	95.6	b 48.5	b 26.2
Virginia	4.1	36.7	18.4	57.5	93.5	36.1	29.5
Washington	15.0	41.2	34.9	61.0	86.3	47.0	35.1
West Virginia	4.2	30.8	14.4	49.9	93.2	36.2	18.0

TABLE III.3: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS—VIDEO AND BUILDING INFRASTRUCTURE—BY STATE—Continued

State	Television	Laser disk player/VCR	Cable TV	Conduits	Cable	Wiring	Power
Wisconsin	11.3	24.2	20.5	52.5	86.3	36.5	33.4
Wyoming	11.6	21.2	[b]40.1	[b]50.9	83.6	29.6	15.9

Note: Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript ''a'' have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript ''b'' have sampling errors equal to or greate than 13 percent but less than 16 percent. Samplng errors may be high for state tables because they are not adjusted for finite population correction.

TABLE III.4: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY COMMUNITY TYPE

Technology element	Central city	Urban fringe/ large town	Rural/ small town
Fiber optic cable	90.2	87.8	84.4
Conduits	66.9	61.9	55.6
Phone lines in instructional areas	66.8	60.6	57.8
Modems	65.0	55.9	53.5
Networks	60.9	50.6	46.5
Phone lines for modems	61.3	55.3	51.8
Electrical wiring for communications technology	54.8	46.7	40.1
Electric power for communications technology	42.9	36.9	27.8
Laser disk player/VCRs	38.7	32.2	30.9
Printers	38.1	26.7	25.2
Cable TV	33.0	32.8	30.0
Computers	31.7	24.5	21.2
TVs	18.6	17.1	13.3
Six or more unsatisfactory technology elements	60.0	52.0	46.5

Note: Sampling errors range ± 1.7–3.5 percent.

TABLE III.5: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY LEVEL OF SCHOOL

Technology element	Elementary	Secondary	Combined
Fiber optic cable	88.3	82.9	84.7
Conduits	63.3	53.1	60.6
Phone lines in instructional areas	64.4	53.2	52.8
Modems	60.9	48.4	54.1
Networks	54.8	42.9	53.6
Phone lines for modems	58.4	47.8	52.3
Electrical wiring for communications technology	48.7	39.2	42.9
Electric power for communications technology	36.7	29.1	30.5
Laser disk player/VCRs	34.9	30.1	29.7
Printers	31.7	23.2	25.9
Cable TV	33.7	24.3	42.7
Computers	27.0	20.3	22.2
TVs	17.3	11.9	14.8
Six or more unsatisfactory technology elements	55.7	41.5	50.9

Note: Sampling errors range ± 1.4–4.0 percent.

TABLE III.6: PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY PROPORTION OF MINORITY STUDENTS

Technology element	Percent of minority students in schools			
	Less than 5.5	5.5 to 20.4	20.5 to 50.4	More than 50.5
Fiber optic cable	85.6	86.2	88.2	88.3
Conduits	59.3	56.2	65.5	62.9
Phone lines in instructional areas	60.7	59.4	60.6	64.9
Modems	55.9	52.7	59.9	63.1
Networks	48.9	49.6	56.2	55.0
Phone lines for modems	54.0	51.2	58.7	59.9
Electrical wiring for communications technology	42.3	44.7	46.9	53.5
Electric power for communications technology	30.3	30.5	36.3	44.8
Laser disk player/VCRs	31.3	29.1	37.6	38.4
Printers	27.1	28.5	30.3	33.4
Cable TV	28.2	25.7	33.9	41.4
Computers	23.5	24.9	25.6	28.0
TVs	13.1	15.4	14.7	22.3
Six or more unsatisfactory technology elements	48.7	50.0	54.4	57.4

Note: Sampling errors range ± 1.8–4.0 percent.

TABLE III.7.—PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY GEOGRAPHIC REGION

Technology element	North-east	Mid-west	South	West
Fiber optic cable	86.5	85.7	86.1	89.4
Conduits	57.2	61.5	56.0	69.0
Phone lines in instructional areas	59.2	60.9	62.0	61.9
Modems	53.9	57.8	54.9	63.9
Networks	52.0	53.3	45.6	59.0
Phone lines for modems	51.0	55.1	54.2	61.6

TABLE III.7.—PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY GEOGRAPHIC REGION—Continued

Technology element	North-east	Mid-west	South	West
Electrical wiring for communications technology	47.2	44.9	40.9	55.0
Electric power for communications technology	33.5	34.0	30.4	42.6
Laser disk player/VCRs	36.7	33.5	29.7	36.7
Printers	27.6	31.4	25.6	33.6
Cable TV	35.4	28.3	26.4	41.3
Computers	23.7	26.2	21.7	30.1
TVs	21.0	15.7	11.3	18.9
Six or more unsatisfactory technology elements	50.8	52.3	47.1	59.9

Note.—Sampling errors range ± 1.6–4.6 percent.

TABLE III.8.—PERCENT OF SCHOOLS REPORTING INSUFFICIENT TECHNOLOGY ELEMENTS BY PROPORTION OF STUDENTS APPROVED FOR FREE OR REDUCED LUNCH

Technology element	Percent of students approved for free or reduced lunch			
	Less than 20	20 to less than 40	40 to less than 70	70 or more
Fiber optic cable	86.9	86.3	87.9	88.9
Conduits	59.2	60.4	64.1	62.2
Phone lines in instructional areas	57.9	59.9	64.3	68.2
Modems	52.1	56.1	62.4	61.9
Networks	48.0	50.1	56.3	54.3
Phone lines for modems	51.7	56.2	57.4	59.5
Electrical wiring for communications technology	45.7	43.5	48.7	47.4
Electric power for communications technology	32.2	32.0	35.5	38.1
Laser disk player/VCRs	30.3	30.6	37.8	34.1
Printers	23.7	28.4	33.3	30.0
Cable TV	25.5	28.6	31.8	37.8
Computers	20.9	23.7	28.0	25.4
TVs	14.5	12.4	16.2	17.3
Six or more unsatisfactory technology elements	47.7	49.6	56.0	56.1

Note.—Sampling errors range ± 1.7–3.9 percent.

Table III. 9.—Average number of students per computer by State

State:	Students per computer
Alabama	16.8
Alaska	7.6
Arizona	11.9
Arkansas	12.5
California	21.1
Colorado	12.6
Connecticut	14.5
Delaware	17.7
District of Columbia	17.2
Florida	12.1
Georgia	13.4
Hawaii	15.6
Idaho	12.7
Illinois	18.9
Indiana	11.1
Iowa	10.9
Kansas	9.9
Kentucky	10.2
Louisiana	20.6
Maine	16.9
Maryland	14.9
Massachusetts	15.6
Michigan	19.9
Minnesota	10.2
Mississippi	14.5
Missouri	15.2
Montana	7.9
Nebraska	10.3
Nevada	21.4
New Hampshire	20.8
New Jersey	13.5
New Mexico	10.8

Table III. 9.—Average number of students per computer by State—Continued

	Students per computer
New York	15.6
North Carolina	13.4
North Dakota	8.7
Ohio	25.3
Okahoma	13.2
Oregon	15.5
Pennsylvania	14.8
Rhode Island	21.6
South Carolina	12.4
South Dakota	9.0
Tennessee	18.7
Texas	11.4
Utah	11.7
Vermont	16.9
Virginia	12.7
Washington	13.7
West Virginia	12.9
Wisconsin	10.7
Wyoming	7.0

Note.—Sample errors range ±1.1–4.9 percent, except Vermont, which was 8 percent.

APPENDIX IV—DATA—FACILITIES REQUIREMENTS FOR KEY EDUCATION REFORM AND IMPROVEMENT ACTIVITIES

TABLE IV.1: PERCENT OF SCHOOLS REPORTING MEETING ''NOT WELL AT ALL'' SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES—SMALL-GROUP INSTRUCTION, LARGE-GROUP INSTRUCTION, STORE AND DISPLAY STUDENT ASSESSMENT MATERIALS—BY STATE

State	Small-group instruction	Large-group instruction	Store student assessment materials	Display student assessment materials
Alabama	6.0	29.0	33.7	31.8
Alaska	14.5	51.0	47.2	28.6
Arizona	6.4	35.2	37.2	38.6
Arkansas	5.9	30.3	13.8	12.1
California	15.2	51.3	47.6	40.4
Colorado	4.6	37.7	25.1	23.2
Connecticut	5.3	[a]34.1	26.6	19.3
Delaware	[a]15.5	[b]29.7	[b]33.9	[b]38.7
District of Columbia	5.7	[a]30.3	[a]31.1	21.0
Florida	5.8	43.4	29.2	28.6
Georgia	5.6	23.3	21.2	19.7
Hawaii	2.6	36.1	[a]39.2	27.7
Idaho	6.0	29.5	30.5	30.0
Illinois	13.5	46.5	32.7	35.6
Indiana	10.0	34.6	27.1	23.4
Iowa	5.8	32.8	20.4	21.4
Kansas	6.4	53.1	32.9	33.7
Kentucky	4.0	30.5	26.2	19.4
Louisiana	7.4	30.8	33.7	27.3
Maine	17.0	[a]43.1	[a]40,9	[a]43.0
Maryland	8.3	39.3	40.6	25.8
Massachusetts	13.4	[a]40.5	[a]33.5	28.3
Michigan	12.6	39.4	38.1	37.5
Minnesota	6.8	37.6	28.4	26.4
Mississippi	2.3	28.3	21.7	22.8
Missouri	1.9	33.2	22.1	17.0
Montana	3.4	45.1	28.9	29.0
Nebraska	5.9	60.4	22.2	18.8
Nevada	0.3	26.7	14.2	19.7
New Hampshire	13.6	[a]49.3	[a]44.1	[a]33.5
New Jersey	16.4	28.5	28.9	20.5
New Mexico	3.7	27.8	27.1	23.6
New York	17.9	45.1	38.0	29.1
North Carolina	5.6	26.9	27.9	26.6
North Dakota	3.5	37.0	16.0	23.2
Ohio	17.6	42.7	43.1	33.0
Oklahoma	1.6	34.6	21.6	25.2
Oregon	3.2	44.9	29.3	29.5
Pennsylvania	9.1	29.9	24.5	19.0
Rhode Island	11.3	[a]42.9	[a]37.7	[a]30.0
South Carolina	7.2	33.3	29.7	18.9
South Dakota	9.1	29.2	26.5	20.4
Tennessee	7.5	24.9	19.4	22.3
Texas	1.5	32.1	19.0	17.4
Utah	13.9	35.3	35.2	30.9
Vermont	9.5	[b]41.3	[b]37.3	[b]32.6
Virginia	10.0	31.9	38.3	35.8
Washington	13.9	47.1	40.7	35.7

TABLE IV.1: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES—SMALL-GROUP INSTRUCTION, LARGE-GROUP INSTRUCTION, STORE AND DISPLAY STUDENT ASSESSMENT MATERIALS—BY STATE—Continued

State	Small-group instruction	Large-group instruction	Store student assessment materials	Display student assessment materials
West Virginia	19.0	49.7	40.3	38.7
Wisconsin	14.6	32.1	24.1	18.3
Wyoming	0.7	[a]35.3	11.6	8.0

Note: Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript "a" have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript "b" have sampling errors equal to or greater than 13 percent but less than 16 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE IV.2: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES—PARENT SUPPORT, SOCIAL/HEALTH SERVICES, TEACHER PLANNING AND PRIVATE AREAS FOR COUNSELING/TESTING—BY STATE

State	Parent support	Social/health services	Teacher planning	Private areas for counseling/testing
Alabama	30.5	41.0	10.4	20.5
Alaska	32.8	40.7	30.7	41.1
Arizona	28.8	25.5	10.9	31.2
Arkansas	11.0	11.7	4.3	8.3
California	39.1	41.4	20.8	46.0
Colorado	16.4	25.4	9.6	22.4
Connecticut	22.6	9.7	11.3	23.0
Delaware	[b]31.6	[b]34.5	13.7	[a]21.0
District of Columbia	13.6	[a]29.6	9.6	[a]21.6
Florida	24.0	23.0	15.5	25.6
Georgia	17.1	22.4	14.2	12.0
Hawaii	32.6	21.2	19.9	30.9
Idaho	15.9	28.8	12.0	19.2
Illinois	23.3	26.4	14.8	37.0
Indiana	17.8	8.9	15.2	23.9
Iowa	21.0	19.4	4.9	16.4
Kansas	21.2	24.2	13.4	30.1
Kentucky	22.4	26.8	7.8	20.1
Louisiana	24.9	26.1	12.8	32.3
Maine	[a]34.0	[a]34.6	14.1	23.6
Maryland	21.5	23.2	15.4	28.3
Massachusetts	20.1	23.1	13.4	26.2
Michigan	27.5	44.3	12.6	24.5
Minnesota	19.4	20.1	17.4	28.9
Mississippi	22.2	29.8	3.3	12.1
Missouri	10.4	18.9	3.6	9.6
Montana	15.8	30.7	6.1	19.5
Nebraska	23.7	24.1	13.0	29.9
Nevada	13.6	21.0	1.0	5.7
New Hampshire	[a]37.5	[a]28.3	[a]28.1	[a]38.2
New Jersey	18.5	17.4	12.2	25.6
New Mexico	13.0	25.6	9.3	26.2
New York	25.3	23.3	16.7	29.8
North Carolina	17.1	21.4	16.1	24.6
North Dekota	20.5	30.9	7.6	15.8
Ohio	30.0	31.7	17.2	31.6
Oklahoma	13.3	29.2	4.6	15.1
Oregon	30.9	39.8	13.0	18.8
Pennsylvania	14.9	15.1	10.0	15.5
Rhode Island	[a]38.6	[a]31.9	15.0	[a]35.2
South Carolina	18.8	30.4	14.3	18.1
South Dakota	19.4	25.8	10.5	17.8
Tennessee	18.2	40.8	8.4	22.9
Texas	17.8	17.7	5.2	13.9
Utah	29.1	25.0	21.5	33.8
Vermont	[a]22.6	[a]33.5	[b]21.8	[b]33.9
Virginia	30.6	25.0	18.9	18.6
Washington	29.7	39.7	16.5	30.0
West Virginia	27.4	47.3	15.5	38.9
Wisconsin	25.2	23.9	19.9	30.2
Wyoming	6.8	18.6	1.0	17.7

Note: Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript "a" have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript "b" have sampling errors equal to or greater than 13 percent but less than 16 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE IV.3: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES—LABORATORY SCIENCE, LIBRARY/MEDIA CENTER, DAY CARE, BEFORE/AFTER SCHOOL CARE—BY STATE

State	Laboratory science	Library/media center	Day care	Before/after school care
Alabama	41.6	6.1	82.9	62.8

TABLE IV.3: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES—LABORATORY SCIENCE, LIBRARY/MEDIA CENTER, DAY CARE, BEFORE/AFTER SCHOOL CARE—BY STATE—Continued

State	Laboratory science	Library/media center	Day care	Before/after school care
Alaska	61.7	31.1	89.1	63.2
Arizona	44.1	12.3	72.3	50.1
Arkansas	26.5	1.3	87.2	74.1
California	58.2	19.4	75.7	63.5
Colorado	36.6	4.8	[b]64.8	[a]45.3
Connecticut	[a]43.8	13.3	[a]73.2	53.6
Delaware	[b]59.3	[b]29.1	[b]77.0	52.4
District of Columbia	[a]46.1	12.9	[b]46.8	45.9
Florida	43.9	9.3	68.8	43.1
Georgia	38.4	0.2	64.9	43.6
Hawaii	48.9	24.6	75.9	23.7
Idaho	34.1	13.0	86.2	76.3
Illinois	46.6	18.0	79.2	69.1
Indiana	33.3	6.4	70.4	47.7
Iowa	28.9	9.2	83.5	64.3
Kansas	40.4	16.5	87.2	61.2
Kentucky	35.2	6.0	77.8	62.0
Louisiana	43.7	13.3	82.5	64.4
Maine	58.6	25.4	87.9	87.5
Maryland	45.0	15.8	[a]57.0	36.9
Massachusetts	[a]48.8	24.4	78.8	[a]62.0
Michigan	48.6	19.0	76.4	56.5
Minnesota	45.7	12.0	73.6	50.2
Mississippi	39.1	4.8	80.5	76.3
Missouri	41.9	5.8	72.4	54.3
Montana	35.1	8.9	91.7	80.4
Nebraska	35.3	11.2	91.0	73.9
Nevada	71.8	11.5	89.9	28.8
New Hampshire	[a]47.0	[a]20.9	85.9	[a]61.3
New Jersey	[a]42.9	16.5	79.6	[a]53.3
New Mexico	38.5	15.9	66.2	53.6
New York	46.1	22.4	80.0	52.5
North Carolina	38.4	7.2	69.1	33.4
North Dakota	23.7	16.0	80.9	73.0
Ohio	50.6	16.8	88.9	69.5
Oklahoma	23.9	7.0	72.2	60.5
Oregon	51.5	7.6	75.4	54.0
Pennsylvania	30.3	7.8	[a]66.0	[a]56.7
Rhode Island	[a]45.9	[a]26.4	[a]77.9	[a]63.3
South Carolina	47.5	1.7	83.2	63.5
South Dakota	29.2	12.0	88.0	77.5
Tennessee	43.8	7.8	79.2	52.4
Texas	25.1	9.2	73.5	50.3
Utah	40.5	24.6	75.0	74.5
Vermont	[b]38.8	[b]14.2	86.8	[b]54.8
Virginia	40.8	13.5	88.4	56.9
Washington	51.5	15.6	75.0	67.2
West Virginia	43.1	28.4	93.9	81.1
Wisconsin	35.2	13.4	83.9	71.2
Wyoming	30.9	16.4	91.3	59.6

Note: Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript "a" have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript "b" have sampling errors equal to or greater than 13 percent but less than 16 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE IV.4: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES BY COMMUNITY TYPE

Activity	Central city	Urban fringe/large town	Rural/small town
Small-group instruction	12.0	9.8	7.6
Large-group instruction	38.8	34.8	39.8
Store student assessment materials	29.9	32.2	31.5
Display student assessment materials	27.1	26.5	28.5
Parent support	24.2	23.3	23.1
Social/health services	27.1	24.4	28.4
Teacher planning	14.7	12.8	12.2
Private areas for counseling/testing	30.4	25.8	22.6
Laboratory science	48.3	43.7	36.9
Library/media center	13.6	13.9	12.8
Day care	76.4	70.2	82.4
Before/after school care	54.0	51.1	66.2

Note: Sampling errors range ±1.3–3.5 percent

TABLE IV.5: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES BY LEVEL OF SCHOOL

Activity	Elementary	Secondary	Combined
Small-group instruction	10.5	7.0	5.6
Large-group instruction	39.3	33.9	46.9
Store student assessment materials	31.7	30.3	29.7
Display student assessment materials	27.1	28.7	28.5

TABLE IV.5: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES BY LEVEL OF SCHOOL—Continued

Activity	Elementary	Secondary	Combined
Parent support	22.7	24.8	29.8
Social/health services	27.2	26.5	27.2
Teacher planning	14.0	10.5	13.8
Private areas for counseling/testing	28.5	18.1	24.2
Laboratory science	51.6	15.3	42.3
Library/media center	13.3	11.5	27.7
Day care	76.3	81.3	76.6
Before/after school care	53.3	73.5	67.2

Note: Sampling errors range ±1.4–4.0 percent.

TABLE IV.6: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES BY PROPORTION OF MINORITY STUDENTS

Activity	Percent minority students			
	Less than 5.5	5.5 to less than 20.4	20.5 to less than 50.4	50.5 or more
Small-group instruction	8.9	10.5	9.4	9.7
Large-group instruction	38.2	36.8	36.5	41.0
Store student assessment materials	30.4	30.7	32.4	32.5
Display student assessment materials	27.3	25.6	28.4	29.0
Parent support	22.2	20.7	24.8	27.0
Social/health services	25.6	24.9	27.8	31.3
Teacher planning	13.0	12.6	11.4	15.5
Private areas for counseling/testing	22.6	25.2	27.3	30.6
Laboratory science	39.3	38.9	42.8	49.1
Library/media center	13.6	11.0	12.7	15.5
Day care	80.7	73.2	77.0	77.2
Before/after school care	63.2	52.7	57.2	58.4

Note: Sampling errors range ±1.7–4.0 percent.

TABLE IV.7: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" SELECTED FUNCTIONAL REQUIREMENTS OF EDUCATION REFORM ACTIVITIES BY GEOGRAPHIC REGION

Activity	Northeast	Midwest	South	West
Small-group instruction	13.8	10.7	5.5	10.5
Large-group instruction	37.4	40.7	32.3	44.5
Store student assessment materials	32.5	30.9	26.2	38.6
Display student assessment materials	25.6	28.3	23.8	33.9
Parent support	22.1	22.8	20.5	30.1
Social/health services	20.8	26.3	25.5	35.3
Teacher planning	14.0	13.4	10.5	16.1
Private areas for counseling/testing	25.3	26.8	19.6	34.1
Laboratory science	42.8	41.9	36.2	50.4
Library/media center	17.8	14.0	8.7	16.0
Day care	76.9	80.9	75.7	76.4
Before/after school care	57.4	63.2	54.1	60.9

Note: Sampling errors range ±1.1–4.8 percent.

TABLE IV.8: PERCENT OF SCHOOLS REPORTING MEETING "NOT WELL AT ALL" THE FUNCTIONAL REQUIREMENTS OF SELECTED EDUCATION REFORM ACTIVITIES BY PROPORTION OF STUDENTS APPROVED FOR FREE OR REDUCED LUNCH

Activity	Percent of students approved for free or reduced lunch			
	Less than 20	20 to less than 40	40 to less than 70	70 or more
Small-group instruction	9.2	8.8	8.7	10.0
Large-group instruction	32.5	37.3	40.5	41.3
Store student assessment materials	29.3	31.0	31.1	34.3
Display student assessment materials	25.8	25.0	31.3	29.3
Parent support	21.3	23.8	24.6	23.0
Social/health services	20.0	26.9	32.0	30.6
Teacher planning	12.0	12.0	12.7	15.7
Private areas for counseling/testing	21.4	22.9	29.3	31.4
Laboratory science	33.0	38.0	48.5	50.3
Library/media center	9.7	10.7	15.2	15.0
Day care	70.7	79.7	80.9	79.0
Before/after school care	54.5	60.6	61.8	59.3

Note: Sampling errors range ± 2.1–3.9 percent.

APPENDIX V—DATA—ENVIRONMENTAL NEEDS

TABLE V.1: PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS—LIGHTING, HEATING, VENTILATION, INDOOR AIR QUALITY—BY STATE

State	Lighting	Heating	Ventilation	Indoor air quality
Alabama	14.7	22.0	26.1	23.2
Alaska	28.1	38.9	51.9	49.9
Arizona	15.7	19.9	29.5	19.6
Arkansas	7.5	7.9	11.9	10.0
California	31.1	24.7	28.8	21.8
Colorado	[a] 21.7	[a] 29.3	[a] 37.2	24.0
Connecticut	9.3	23.8	[a] 35.3	18.5
Delaware	9.1	[b] 25.6	[b] 30.3	[b] 26.4
District of Columbia	[b] 40.2	[a] 31.0	[a] 33.9	[a] 31.5
Florida	16.0	17.8	34.6	30.6
Georgia	6.9	11.8	12.4	7.7
Hawaii	7.6	6.0	26.2	20.9
Idaho	13.2	19.8	36.5	25.5
Illinois	14.2	21.0	29.2	18.6
Indiana	22.8	20.7	28.8	21.2
Iowa	9.5	11.1	24.2	17.1
Kansas	21.5	22.3	35.2	24.1
Kentucky	14.6	17.7	25.6	19.2
Louisiana	18.4	17.5	7.2	6.3
Maine	9.6	19.7	28.7	30.1
Maryland	18.0	19.2	28.8	20.5
Massachusetts	19.9	32.8	[a] 41.9	30.9
Michigan	12.0	16.7	25.3	15.4
Minnesota	11.9	15.0	35.5	30.1
Mississippi	8.0	10.9	9.4	8.8
Missouri	4.7	10.1	12.8	8.2
Montana	4.7	9.4	20.8	12.9
Nebraska	7.4	16.9	32.9	21.4
Nevada	15.7	21.0	22.6	20.4
New Hampshire	14.0	24.8	[a] 46.8	[a] 27.2
New Jersey	11.5	10.5	21.7	8.1
New Mexico	20.9	23.9	32.7	22.7
New York	15.8	20.9	36.5	24.1
North Carolina	17.4	14.0	23.4	17.7
North Dakota	10.7	20.1	28.6	24.0
Ohio	13.9	24.9	33.3	18.6
Oklahoma	16.2	18.7	20.6	16.8
Oregon	25.8	27.4	40.1	27.0
Pennsylvania	11.0	17.1	23.3	12.4
Rhode Island	25.4	25.8	28.9	[a] 29.8
South Carolina	7.2	13.0	18.3	18.8
South Dakota	9.5	15.1	25.7	19.9
Tennessee	8.3	17.1	19.2	16.0
Texas	13.0	14.2	16.4	12.3
Utah	14.1	21.9	34.1	20.9
Vermont	10.5	[a] 22.7	[a] 32.2	[a] 25.4
Virginia	14.4	16.6	21.7	19.8
Washington	24.0	30.4	41.9	32.4
West Virginia	23.9	34.1	46.5	31.3
Wisconsin	9.6	13.9	20.5	13.3
Wyoming	5.0	11.2	24.1	15.4

Note: Sampling errors are less than ±11 percent unless otherwise noted. Responses marked with a superscript "a" have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript "b" have sampling errors equal to or greater than 13 percent but less than 14.3 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE V.2: PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS—ACOUSTICS, FLEXIBILITY, PHYSICAL SECURITY—BY STATE

State	Acoustics	Flexibility	Physical security
Alabama	32.8	47.6	35.7
Alaska	32.4	55.5	27.4
Arizona	26.4	52.6	25.3
Arkansas	17.5	42.4	21.2
California	34.2	70.4	41.2
Colorado	21.9	[a] 46.5	13.3
Connecticut	[a] 28.4	[a] 48.4	22.3
Delaware	[a] 19.3	[b] 48.6	[a] 22.3
District of Columbia	[b] 51.8	[b] 52.4	[a] 37.3
Florida	28.0	56.6	33.7
Georgia	11.9	36.2	16.8
Hawaii	37.7	[a] 54.1	39.7
Idaho	35.4	53.8	22.5
Illinois	29.1	55.4	23.6
Indiana	33.0	55.4	18.4
Iowa	28.2	55.3	24.1
Kansas	30.3	56.6	21.9
Kentucky	26.4	50.5	21.0
Louisiana	27.5	53.4	29.6
Maine	[a] 42.6	[a] 58.4	[a] 33.3
Maryland	19.6	23.1	13.4
Massachusetts	[a] 41.3	[a] 51.2	27.9
Michigan	31.0	47.2	20.2
Minnesota	20.7	55.6	27.5
Mississippi	22.0	41.2	28.2
Missouri	22.5	43.2	14.5
Montana	22.9	50.6	18.0
Nebraska	26.1	[a] 46.8	21.3
Nevada	7.6	53.5	13.7
New Hampshire	[a] 43.8	[a] 68.8	21.6
New Jersey	30.3	[a] 60.6	19.8
New Mexico	32.1	60.5	24.1
New York	30.0	64.9	21.2
North Carolina	29.5	59.0	21.8
North Dakota	32.8	41.3	18.1
Ohio	39.6	70.6	23.5
Oklahoma	27.3	48.8	26.6
Oregon	31.8	72.2	28.7

TABLE V.2: PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS—ACOUSTICS, FLEXIBILITY, PHYSICAL SECURITY—BY STATE—Continued

State	Acoustics	Flexibility	Physical security
Pennsylvania	16.7	[a] 42.0	12.8
Rhode Island	[a] 38.6	[a] 63.7	[a] 34.7
South Carolina	22.7	53.8	24.6
South Dakota	23.6	38.5	11.2
Tennessee	21.5	48.6	27.9
Texas	21.3	43.7	18.3
Utah	17.8	52.2	16.1
Vermont	[a] 22.9	[b] 47.4	[b] 22.8
Virginia	24.0	37.5	20.6
Washington	39.7	64.8	34.6
West Virginia	44.0	68.7	34.4
Wisconsin	19.7	52.5	18.8
Wyoming	17.7	52.6	21.9

Note.—Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript "a" have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript "b" have sampling errors equal to or greater than 13 percent but less than 16 percent. Sampling errors may be high for state tables because they are not adjusted for finite population correction.

TABLE V.3.—PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS BY COMMUNITY TYPE

Environmental factor	Central city	Urban fringe/ large town	Rural/ small town
Lighting	20.4	17.3	11.4
Heating	22.8	19.0	17.0
Ventilation	31.5	28.2	23.6
Indoor air quality	22.5	19.0	17.2
Acoustics for noise control	31.6	26.3	26.8
Flexibility	59.7	50.8	52.0
Physical security	26.5	22.8	23.5

Note.—Sampling errors range ± 1.6–3.5 percent.

TABLE V.4.—PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS BY LEVEL OF SCHOOL

Environmental factor	Elementary	Secondary	Combined
Lighting	16.3	13.8	15.0
Heating	18.8	20.6	18.6
Ventilation	26.4	29.2	27.0
Indoor air quality	19.1	19.4	21.8
Acoustics for noise control	28.3	26.8	32.2
Flexibility	54.9	51.5	51.4
Physical security	22.9	27.4	28.8

Note.—Sampling errors range ± 1.7–3.9 percent.

TABLE V.5.—PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS BY PROPORTION OF MINORITY STUDENTS

Environmental factor	Percent of minority students			
	Less than 5.5	5.5 to less than 20.4	20.5 to less than 50.5	50.5 or more
Lighting	12.1	14.3	16.0	22.9
Heating	17.7	18.1	18.7	23.7
Ventilation	25.6	25.4	27.4	31.4
Indoor air quality	17.5	17.6	20.4	22.9
Acoustics for noise control	27.7	25.1	26.8	32.8
Flexibility	50.8	52.3	55.3	60.1
Physical security	21.6	21.3	22.7	33.3

Note.—Sampling errors range ± 1.8–3.9 percent.

TABLE V.6—PERCENT OF SCHOOLS REPORTING UNSATIFACTORY ENVIRONMENTAL FACTORS BY GEOGRAPIC REGION

Environmental factor	Northeast	Midwest	South	West
Lighting	13.8	12.8	13.7	23.8
Heating	20.3	18.2	16.3	24.3
Ventilation	31.4	27.8	20.9	32.3
Indoor air quality	19.9	18.4	16.8	23.5
Acoustics	29.6	29.3	24.4	30.9
Flexibility	55.7	54.2	47.0	62.8
Physical security	21.1	21.2	23.9	31.4

Note:—Sampling errors range ± 1.8–4.5 percent.

TABLE V.7—PERCENT OF SCHOOLS REPORTING UNSATISFACTORY ENVIRONMENTAL FACTORS BY PROPORTION OF STUDENTS APPROVED FOR FREE OR REDUCED LUNCH

Environmental factor	Percent of students approved for free or reduced lunch			
	Less than 20	20 to less than 40	40 to less than 70	70 or more
Lighting	14.3	13.2	15.8	19.1
Heating	18.9	15.5	20.6	22.1
Ventilation	26.1	23.5	28.3	30.6
Indoor air quality	15.8	15.9	22.6	22.6
Acoustics	24.1	27.0	29.4	32.8
Flexibility	49.0	53.5	59.0	57.4
Physical security	19.4	18.8	25.9	30.0

Note.—Sampling errors range ± 2.3–3.8 percent.

APPENDIX VI—TECHNICAL APPENDIX

SCOPE AND METHODOLOGY OVERVIEW

To determine the extent to which America's 80,000 schools have the physical capacity to support 21st century technology and education reform for all students, we surveyed a national sample of public schools and their associated districts and augumented the surveys with visits to selected school districts. We used various experts to advise us on the design and analysis of this project (See app. I.)

We sent the surveys to a nationally representative sample of about 10,000 public schools in over 5,000 associated school districts. For our sample, we used the public school sample for the Department of Education's 1993–94 Schools and Staffing Survey (SASS), which is a multifaceted, nationally representative survey sponsored by the National Center for Educational Statistics (NCES) and administered by the Bureau of the Census.

We asked about the physical condition of schools and how well schools could meet selected functional requirements of education reform, such as having space for small- and large-group instruction or science laboratories. We also asked officials if their schools had sufficient data, voice, and video technologies and infrastructure to support these technologies. A list of the relevant survey items appears in appendix II.[18]

We directed the survey to those officials who are most knowledgeable about facilities—such as facilities directors and other central office administrators of the districts that housed our sampled schools. Our analyses are based on responses from 78 percent of the schools sampled and 75 percent of the associated districts. Analyses of nonrespondent characteristics showed them to be similar to respondents. Findings from the survey have been statistically adjusted (weighted) to produce estimates that are representative at national and state levels. All data are self-reported, and we did not independently verify their accuracy.

In addition, we visited 41 schools in 10 selected school districts varying in location, size, and minority composition to augment and illustrate our survey results. We also reviewed the literature on education reform, including the relationship between environmental conditions and student learning. We conducted our study between January 1994 and March 1995 in accordance with generally accepted government auditing standards.

SCHOOL AND DISTRICT SURVEYS

For our review of the physical condition of America's schools, we wanted to determine physical condition as perceived by the most knowledgeable school district personnel. To accomplish this, we mailed school and district questionnaires to superintendents of school districts associated with a nationally representative sample of public schools. We asked the superintendents to have district

personnel, such as facilities directors who were very familiar with school facilities, answer the questionnaires. The questionnaires gathered information about (1) the physical condition of schools; (2) costs of bringing schools into good overall condition, which we defined as needing only routine maintenance or minor repairs; and (3) how well schools could meet the functional requirements of education programs. For our school sample, we used the sample for the 1993-94 SASS.

SAMPLING STRATEGY

The 1993-94 SASS sample is designed to give several types of estimates, including both national and state-level estimates. It is necessarily a very complex sample. Essentially, however, it is stratified by state and grade level (elementary, secondary, and combined). It also has separate strata for schools with large Native American populations and for Bureau of Indian Affairs schools. A detailed description of the sample and discussion of the sampling issues is contained in NCES' technical report on the 1993-94 SASS sample.[19]

SURVEY RESPONSE

We mailed our questionnaires to 9,956 sampled schools in 5,459 associated districts across the country in May 1994. We did a follow-up mailing in July 1994 and again in October 1994. After each mailing, we telephoned nonresponding districts to encourage their responses. We accepted returned questionnaires through early January 1995.

Of the 9,956 schools in the original sample, 393 were found to be ineligible for our survey.[20] Subtracting these ineligible schools from our original sample yielded an adjusted sample of 9,563 schools. The number of completed, usable school questionnaires returned was 7,478. Dividing the number of completed, usable returns by the adjusted sample yielded a school response rate of 78 percent. Of the 5,459 associated districts in the original sample, 28 were found to be ineligible for our survey mainly because they were no longer operating. Subtracting these ineligible districts from our original sample of 5,459 associated districts yielded an adjusted district sample of 5,431 districts. The number of completed, usable district questionnaires returned was 4,095. Dividing the number of completed, usable returns by the adjusted district sample yielded a district response rate of 75 percent.[21]

We compared school and district nonrespondents with respondents by urbanicity, location, state, race and ethnicity, and poverty. There were few notable differences between the groups. On the basis of this information, we assumed that our respondents did not differ significantly from the nonrespondents.[22] Therefore, we weighted the respondent data to adjust for nonresponse and yield national and state-level estimates.

SAMPLING ERRORS

All sample surveys are subject to sampling error, that is, the extent to which the results differ from what would be obtained if the whole population had received the questionnaire. Since the whole population does not receive the questionnaire in a sample survey, the true size of the sampling error cannot be known. However, it can be estimated from the responses to the survey. The estimate of sampling error depends largely on the number of respondents and the amount of variability in the data.

For this survey, sampling errors for all school-level estimates at the national level is estimated to be ± 2 percent or less at the 95-percent confidence level. Sampling errors for school-level estimates at the state level are generally within ± 10 percent at the 95-percent confidence level. Sampling errors for a few state-level estimates may go as high as ± 12-15 percent. These are indicated on the tables in the appendixes. Sampling errors for district-level estimates are not available. With the exception of the information on recent bond issues passed by districts, all estimates discussed in this report are school-level estimates at national or state-levels.

NONSAMPLING ERRORS

In addition to sampling errors, surveys are also subject to other types of systematic error or bias that can affect results. This is especially true when respondents are asked to answer questions of a sensitive nature or inherently subject to error. Lack of understanding of the issues can also result in systematic error. Bias can affect both response rates and the way that respondents answer particular questions. It is not possible to assess the magnitude of the effect of biases, if any, on the results of a survey. Rather, possibilities of bias can only be identified and accounted for when interpreting results. This survey had two major possible sources of bias: (1) bias inherent in all self-ratings or self-reports and (2) sensitivity of compliance issues.

Bias inherent in self-ratings may impact results of this survey in two major areas. First, the self-ratings or self-reports of technological sufficiency may be overly optimistic for several reasons. In our analyses, we include as ''sufficient'' responses that indicated moderate and somewhat sufficient capability as well as very sufficient capability. This could indicate a wide range of sufficiency, including some responses that are very close to ''not sufficient.'' In addition, our analyses showed that without any objective standards with which to anchor their responses, schools indicating ''sufficient'' computers and computer/student ratios that ranged from 1:1 to 1:292 (a median of 1:11) for those schools that had computers. About 300 schools that indicated they had no computers for instructional use said that was sufficient. (See table III.9 for more details.) Finally, technology experts who regularly consult with school systems report that the level of knowledge among school administrators and staff of possible use and application of technology in schools is low—further increasing the likelihood that these sufficiency estimates are overly optimistic.

Second, assessing the physical condition of buildings is a very complex and technical undertaking. Moreover, many facilities problems, particularly the most serious and dangerous, are not visible to the naked eye. Further, any dollar estimates made of the cost to repair, retrofit, upgrade, or renovate are just that, estimates, unless the school has recently completed such work. The only way school officials actually know what such work costs is to put it out for bid. Even then, cost changes may occur before the contracted work is completed. Therefore, estimates and evaluations reported are subject to inaccuracies.

A second kind of bias that may occur results from the sensitivity of compliance issues. In this case, our interest in securing information related to compliance with federal mandates, life-safety codes, and physical security put us in a highly sensitive area. For example, respondents may perceive that accurately reporting problems in providing access for disabled students could make the school vulnerable to lawsuits, despite assurances of confidentiality. Consequently, in sensitive areas schools may tend toward underreporting or making conservative estimates.

In general, survey results were consistent with what we saw in our site visits.

SITE VISITS

To illustrate and augment our survey results, we conducted site visits in 10 districts: Chicago, Illinois; Grandview, Washington; Montgomery County, Alabama; New Orleans, Louisiana; New York, New York; Pomona, California; Ramona, California; Raymond, Washington; Richmond, Virginia; and Washington, D.C. Selected to represent key variables, they varied in location, size, and ethnic composition.

During these site visits, we interviewed central office staff, such as district superintendents, facilities directors, and business managers; and school staff, such as principals and teachers. We asked the central office staff about their district demographics, biggest facilities issues, facilities financing, assessment, maintenance programs, resources, and barriers to reaching facilities goals.

In addition, in each district we asked district officials to show us examples of ''typical,'' ''best,'' and ''worst'' schools and verified reliability of these designations with others. In some small districts, we visited all schools. We spoke with administration and staff in the schools we toured. We asked the school staff about their schools' condition, repair and renovation programs, and facilities needs for educational programs.

CLASSIFICATION VARIABLES

Community Type.—Central City: A large central city (a central city of a Standard Metropolitan Statistical Area (SMSA)) with population greater than or equal to 400,000 or a population density greater than or equal to 6,000 per square mile) or a mid-size central city (a central city of an SMSA but not designated a large central city).

Urban Fringe/Large Town: Urban fringe of a large or mid-size central city (a place within an SMSA of a large or mid-size central city and defined as urban by the Bureau of the Census) or a large town (a place not within an SMSA but with a population greater than or equal to 25,000 and defined as urban by the Bureau of the Census).

Rural/Small Town: Rural area (a place with a population of less than 2,500 and defined as rural by the Bureau of the Census) or a small town (a place not within an SMSA, with a population of less than 25,000 but greater than or equal to 2,500 and defined as urban by the Bureau of the Census).

School Level.—Elementary: A school that had grade six or lower or ''ungraded'' and no grade higher than eighth.

Secondary: A school that had no grade lower than the seventh or ''ungraded'' and had grade seven or higher.

Combined: A school that had grades higher than the eighth and lower than the seventh.

Minority Enrollment.—The percentage of students defined as minority using the following definition for minority: American Indian or Alaskan Native; Asian or Pacific Islander; Hispanic, regardless of race (Mexican, Puerto Rican, Cuban, Central or South American, or other culture or origin); Black (not of Hispanic origin).

Geographic Region.—Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania.

Midwest: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

South: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas.

West: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii.

Proportion of Students Receiving Free or Reduced Lunch.—Calculation based on survey question 4 (''What was the total number of Full Time Equivalent (FTE) students enrolled in this school around the first of October 1993?'') and survey question 25 (''Around the first of October 1993, how many applicants in this school were approved for the National School Lunch Program?'').

Student/Computer Ratio.—Calculation based on survey question 4 (''What was the total number of Full Time Equivalent (FTE) students enrolled in this school around the first of October 1993?'') and question 18 (''How many computers for instructional use does this school have?'').

APPENDIX VII.—DATA SUPPORTING FIGURES IN THE REPORT

TABLE VII. 1: DATA FOR FIGURE V.1—PERCENT OF SCHOOLS WITH AIR-CONDITIONING IN CLASSROOMS—BY STATE

State	Percent of schools with air-conditioning in classrooms
Alabama	97.8
Alaska	4.9
Arizona	68.2
Arkansas	95.9
California	67.2
Colorado	28.5
Connecticut	21.7
Delaware	[b] 42.0
District of Columbia	[a] 47.4
Florida	97.8
Georgia	92.9
Hawaii	18.1
Idaho	26.0
Illinois	26.8
Indiana	53.5
Iowa	22.0
Kansas	63.1
Kentucky	92.3
Louisiana	96.0
Maine	2.0
Maryland	55.3
Massachusetts	11.8
Michigan	18.9
Minnesota	19.2
Mississippi	97.3
Missouri	51.1
Montana	13.4
Nebraska	[a] 37.9
Nevada	70.1
New Hampshire	00.0
New Jersey	21.8
New Mexico	70.4
New York	10.2
North Carolina	87.8
North Dakota	18.1
Ohio	15.6
Oklahoma	94.5
Oregon	17.0
Pennsylvania	28.9
Rhode Island	5.8
South Carolina	100.0
South Dakota	10.9
Tennessee	95.2
Texas	98.4
Utah	34.4
Vermont	1.4
Virginia	77.8
Washington	31.8
West Virginia	58.1
Wisconsin	25.7
Wyoming	13.4

Note: Sampling errors are less than ± 11 percent unless otherwise noted. Responses marked with a superscript ''a'' have sampling errors equal to or greater than 11 percent but less than 13 percent. Responses marked with a superscript ''b'' have sampling errors equal to or greater than 13 percent but less than 14.2 percent.

APPENDIX VIII—GAO CONTACTS AND STAFF ACKNOWLEDGMENTS

GAO CONTACTS

Eleanor L. Johnson, Assistant Director, (202) 512–7209; Ella Cleveland, Project Manager, (202) 512–7066; Kathleen Ward, Senior Analyst, (313) 256–8078.

STAFF ACKNOWLEDGMENTS

D. Catherine Baltzell, Supervisory Social Science Analyst; Nancy Kintner-Meyer, Evaluator; Deborah L. McCormick, Senior Social Science Analyst; Edna M. Saltzman, Subproject Manager; Diane E. Schilder, Senior Evaluator.

FOOTNOTES

[1] Sampling error is ±6.61 percent.

[2] Small-group instruction, teacher planning, private areas for student counseling and testing, and library/media centers.

[3] Ventilation, heating, indoor air quality, and lighting.

[4] See Systemwide Education Reform: Federal Leadership Could Facilitate District-Level Efforts (GAO/HRD–93–97, Apr. 30, 1993).

[5] See School-Linked Human Services: A Comprehensive Strategy for Aiding Students at Risk of School Failure (GAO/HEHS–94,21, Dec. 30, 1993).

[6] See Regulatory Flexibility in Schools: What Happens When Schools Are Allowed to Change the Rules? (GAO/HEHS–94–102, Apr. 29, 1994) and Education Reform: School-Based Management Results in Changes in Instruction and Budgeting (GAO/HEHS–94–135, Aug. 23, 1994).

[7] Experts have identified other key components affecting the implementation of technology in schools, such as sufficient teacher training and computer support services. However, because our focus was on school facilities, these components were not included in our survey.

[8] Multimedia uses a single communication system (cable) to transmit voice, data, and video, currently by dignitizing voice and video.

[8] See, for example, The National Information Infrastructure: Requirements for Education and Training, National Coordinating Committee on Technology in Education and Training, (Alexandria, Va: 1994).

[10] Beau Fly Jones et al., Learning, Technology and Policy for Educational Reform, July 1994, Version 1.0, North Central Regional Educational Laboratory (Oak Brook, Ill.: 1994).

[11] The Internet, a global communications network, is a cooperative effort among educational institutions, government agencies, and various commercial and nonprofit organizations. Historically, the Internet has contained mostly scientific research and education information. However, more recently, the kind of information accessible on the Internet has expanded to include library catalogs, full texts of electronic books and journals, government information, campuswide information systems, picture archives, and business data and resources. The Internet allows three primary functions: electronic mail and discussion groups (e mail), use of remote computers (telnet), and transferring files (file transfer protocol).

[12] ''Opportunity to learn'' refers to the sufficiency or quality of the resources, practices, and conditions necessary to provide all students with an opportunity to learn the material in voluntary national content standards or state content standards. See, for example, Andrew Porter, ''The Uses and Misuses of Opportunity-to-Learn Standards,'' Educational Researcher, Vol. 24, No. 1 (1995), pp. 21–27; and Faith E. Crampton and Terry N. Whitney, ''Equity and Funding of School Facilities: Are States at Risk?'' State Legislative Report, Vol. 20, No. 1 (1995), pp. 1–8.

[13] Laser disk players and VCRs were rated as one item. It could be that a sufficient number of VCRs exists but not laser disk players.

[14] The self-reports of sufficiency may be overly optimistic for several reasons. First, in our analyses we included as ''sufficient'' responses that indicated moderate and somewhat sufficient capability as well as very sufficient capability. This could indicate a wide range of sufficiency, including some responses that are very close to ''not sufficient.'' Second, our analysis of responses showed that without any objective standards with which to anchor their responses, schools indicating ''sufficient'' computers had computer/student ratios ranging from 1:1 to 1:292 (a median of 1:11) for those schools that had computers. About 300 schools that indicated they had no computers said that was sufficient. (For more detail, see table III.9 in app. III.) Finally, technology experts who regularly consult with school systems report that the level of knowledge among school administrators and staff of possible use and application of technology in schools is low—further increasing the likelihood that these sufficiency estimates are overly optimistic.

[15] We asked respondents to rate the overall condition of their school buildings on a six-point scale: excellent, good, adequate, fair, poor, or replace. See School Facilities: Condition of America's Schools (GAO/HEHS–95–61, Feb. 1, 1995).

[16] Environmental factors associated with learning include heating, lighting, air-conditioning, acoustics, space flexibility, and physical security.

[17] See, for example, J. Howard Bowers et al., ''Effects of the Physical Environment of Schools on Students,'' (paper presented to 65th Council of Educational Facility Planners, International Conference, 1988) and Carol S. Cash, ''Building Condition and Student Achievement and Behavior,'' doctoral dissertation, Virginia Polytechnic Institute and State University, 1993.

[18] A full copy of the questionnaire appears in the first report in this series, School Facilities: Condition of America's Schools (GAO/HEHS–95–61, Feb. 1, 1995).

[19] Robert Abramson et al., 1993–94 Schools and Staffing Survey: Sample Design and Estimation, NCES (available in July 1995).

[20] Reasons for ineligibility included school no longer in operation, entity not a school, private rather than public school, and post-secondary school only.

[21] Detailed sample and response information for each sample stratum is available upon request from GAO. See appendix VIII for appropriate staff contacts.

[22] We did not poll nonrespondents, so we have no way to verify this assumption.

Ms. MOSELEY-BRAUN. I would like to take a moment to share with the Chair some information. These charts are bulky, but this is information that comes out of the GAO report that I think is a very telling statement about where we are in our country today in terms of education and technology infrastructure.

The report which, as you may know, was entitled ''America's Schools Not Designed or Equipped for 21st Century.''

In this part of the report, most States report that at least 50 percent of schools have insufficient technology.

My own State of Illinois comes down here, where 60 to 69 percent of the schools in Illinois do not have sufficient technology infrastructure. The Presiding Officer's State, I think, does a little better. You are in this category. As you can see, we have a long way to go to get the technology up to speed.

Understand that this report speaks specifically to technology. The first report talked about infrastructure. So we talk about putting in computers. We have heard stories from some of the teachers and people who were questioned in this regard that one of the big problems they run into is, even if they had the computers, the technology, they do not have the capacity to use them. They do not have the phone lines, the cables, and they do not have the ability.

One report was that in the classroom in a particular school—and I will not name it now—there were two outlets in the classroom, and so if more than two teachers plug something in, the whole building would shut down because the circuit breaker would go. Clearly we cannot expect our young people to compete in this world economy, in this global economy, with that kind of millstone around their neck, without having the ability to access the technologies.

The youngsters may play Nintendo, but that is not training them to compete in our global economy. So if we are training them to address the competition we want them to meet, I believe we have a national interest in addressing the infrastructure and technology infrastructure so we can provide our young people with the tools they will need to succeed. Certainly it is an issue that goes to our international competitiveness. Just this

morning in the Finance Committee, Ambassador Kantor was there to talk about trade relations of the United States: Where we are in the balance of trade; where we are with regard to the issues affecting the globalization of this economy; how is our country doing.

The question came up, What is the most important thing we can do to see to it we are able to compete in this global economy? The answer to that question is investment in human capital. The answer to that question is education. The answer to that question is training, so our people, our children will have the skills and the knowledge and the wherewithal and capacity to be competitive.

I point out also the national statistics. I will point out also, in addition to the issue of competitiveness, giving our young people the capacity to compete in this world economy will be a boon to the entire community. If you ask employers in our private sector what is the biggest impediment to them hiring people, it is that they are getting people who are not, right now, trained. So the private sector winds up, if you will, having costs shifted to them because the youngsters that our schools are turning out are not quite yet trained to handle the demands of business.

If we are going to prepare our young people for the global economy, if we are going to prepare our young people for the world of work, if we are going to stop relying on the willy-nilly haphazard shifting of costs to the private sector, and make certain we have the capacity in this Nation to keep America strong through having a well-educated work force, I believe we have a national interest in investing in this infrastructure, and in this technology infrastructure particularly.

This chart talks about the millions of students who attend schools with insufficient technology. Again, this is putting aside for a moment the basic infrastructure like do you have the plugs in the classroom, like having the sufficient lighting. That was the first GAO report, and you recollect that report said we were way behind and our schools were deteriorating and not capable, really, of handling a lot of this stuff.

But look at this. Mr. President, 86 percent of our schools, or 66,000 schools, or 35.4 million children in the United States attend schools that do not have sufficient fiber optic cables for them to access the technology. The fiber optics cable is necessary for them to access the technology and plug into the Internet. You have to have this to get onto the information superhighway. So 35.4 million of our students do not have the capacity to get on that highway in school.

Phone lines for instructional use—again, 61.2 percent of our schools, 47,000 schools, or 24.8 million students in this country do not have phone lines for instructional use.

Conduits, raceways for computers, the computer network cables—60 percent of the schools do not have it, or 24.9 million students.

Go right down the list, even down to televisions. TV's, 15 percent of the schools do not have it; 6.8 million students.

It seems to me, for the kind of investment we require here, we can upgrade the kind of information and resources that are available to our young people, we can give them the tools they will need to learn. We can help teachers teach better and in so doing we will have benefits to the entire community.

I will close by saying what I may have said already but I cannot reiterate it too often. Education is not just a private benefit. It is not just whether or not I can get a good job or I can get a leg up on the competition or whether or not I can afford to be trained or be educated or to have a certain set of skills. Education is more than a private benefit. It is a public good. It goes to the stability and the quality of life of our community as a whole, of our entire country. Every person benefits when we have a well-educated citizenry.

Frankly, that is how this Nation became the strong, great Nation that it was, because we had a work force that was better trained, better equipped, better provided for than any other work force in the world. We are in grave danger of losing that if we do not make the kind of investment in our human capital, in our children, in education, that we need to make in order to give our community the benefits of the talent that I believe these young people have.

So, in closing, I would like to again thank Senator PELL for all his leadership and for his joining on the GAO letter, and thank the Chair for his attention. I have introduced the GAO report into the RECORD.

Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER (Mr. INHOFE). The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. DOLE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. DOLE. Mr. President, what is the pending business? Are we in morning business?

The PRESIDING OFFICER. The pending business is the appropriations bill.

Mr. DOLE. I ask if I may speak as in morning business.

The PRESIDING OFFICER. Without objection, it is so ordered.

FRANKLIN ROOSEVELT—DISABILITY HERO

Mr. DOLE. Mr. President, as many Members of the Senate know, it is my custom to speak each year about a disability subject on April 14. It is the date I was wounded in World War II and joined the disability community myself. This year we will be in recess on April 14, so I will give my annual message today.

Mr. President, I will talk about another member of the disability community—certainly one of its most prominent members. But throughout his life, his disability was not only unknown to most people, it was denied and hidden.

I am speaking about President Franklin Roosevelt. Next week, the Nation will commemorate the 50th anniversary of his death on April 12, 1945. He will surely be recalled by many as a master politician; an energetic and inspiring leader during the dark days of the Depression; a tough, single-minded Commander in Chief during World War II; and a statesman.

No doubt about it, he was all these things. But he was also the first elected leader in history with a disability, and he was a disability hero.

FDR'S SPLENDID DECEPTION

Mr. President, in 1921, at age 39, Franklin Roosevelt was a young man in a hurry. He was following the same political path that took his cousin, Theodore Roosevelt, to the White House. In 1910 he was elected to the New York State Senate, and later was appointed Assistant Secretary of the Navy. In 1920, he was the Democratic candidate for Vice President.

Then, on the evening of August 10, while on vacation, he felt ill and went to bed early. Within 3 days he was paralyzed from the chest down. Although the muscles of his upper body soon recovered, he remained paralyzed below the waist.

His political career screeched to a halt. He spent the next 7 years in rehabilitation, determined to walk again. He never did. He mostly used a wheelchair. Sometimes he was carried by his sons or aides. Other times he crawled on the floor.

But he did perfect the illusion of walking—believing that otherwise his political ambitions were dead. He could stand upright only with his lower body painfully wrapped in steel braces. He moved forward by swinging his hips, leaning on the arm of a family member or aide. It worked for only a few feet at a time. It was dangerous. But it was enough to convince people that FDR was not a ''cripple.'' FDR biographer Hugh Gallagher has called this effort, and other tricks used to hide his disability. ''FDR's splendid deception.''

This deception was aided and abetted by many others. The press were coconspirators. No reporter wrote that FDR could not walk, and no photographer took a picture of him in his wheelchair. for that matter, thousands saw him struggle when he walked. Maybe they did not believe or understand what they saw.

In 1928, FDR ended his political exile, and was elected Governor of New York. Four years later, he was President. On March 4, 1933, standing at the east