

## Connecting the Bits

### A reference for using technology in teaching and learning in K–12 schools

#### Purpose and Sources

*Connecting the Bits* provides information for integrating technology into teaching and learning in K–12 schools. The information is based upon findings from two past programs of the National Foundation for the Improvement of Education:

*The Road Ahead* program explored how technology can facilitate teaching and learning in both formal and informal education settings. Twenty-two sites across the country created school-community partnerships. The sites reflected a full range of technology experience, from elementary students' first computer use to high school students' commercial quality multimedia presentations. *The Road Ahead* program was supported by Bill Gates, chairman of the Microsoft Corporation, with proceeds from his book, *The Road Ahead*.

The *Learning Tomorrow* program funded pilot projects that investigated how technology can improve teaching and learning for underserved students. The program supported teachers' professional development, examined how technology can meet diverse student learning needs, and engaged students in real-world learning activities. *Learning Tomorrow* was supported by the Sega Foundation of America and the AT&T Foundation.

Evaluative data from the experiences of the thirty-two teams of teachers, administrators, and community-based partners that participated in *The Road Ahead* and *Learning Tomorrow* programs are major sources

of information for *Connecting the Bits*.

### **Primary Audiences and Suggested Uses**

*Connecting the Bits* is principally addressed to educators, including teachers, administrators, technology coordinators, media specialists, paraprofessionals, higher education faculty, and curriculum specialists.

*Connecting the Bits* may also provide useful information to informal educators, including librarians, museum staff, community computer center staff, the staff of other community-based organizations, parents and educational policy makers, including school boards, chief state school officers, and legislators.

*Connecting the Bits* addresses some of the recommended approaches to student learning that are often used with educational technology. Network technicians and administrators based in schools or districts that want to learn more about these approaches will also find this report helpful.

Both novice and experienced educational technology users will benefit from the report.

School and district technology planners will be interested to note that *Connecting the Bits* provides valuable information about “best practices” in integrating technology, which can serve as a guide for technology planning.

Teacher study groups may wish to read and discuss the report, providing examples from their own classrooms, schools, and districts. *Connecting the Bits* may also serve as background reading for teacher action research.

The report may suggest roles that parents can play in supporting technology in education; for example, as members of technology site councils, teacher-parent study groups, or rubric development committees.

Administrators and technology coordinators may employ the report to aid in meshing hardware and software planning with instructional goals and budgetary priorities. Media specialists and school technology coordinators may find it helpful in coordinating with classroom teachers and

administrators in subject matter, program planning, and hardware and software support.

These suggestions are not exhaustive. They are only meant to serve as examples, and to be helpful in generating additional uses and audiences.

### **Recommendations for Readers**

*Connecting the Bits* consists of a general summary of findings from *The Road Ahead* program, followed by six papers on major topics of interest in integrating technology into teaching and learning. Each paper contains an annotated bibliography.

“Lessons from *The Road Ahead*” will be of value in providing research-based information about the use of technology in schools to the general public and to lay audiences for whom the subject is of broad interest. Those who are well-versed in educational technology may wish to skim “Lessons from *The Road Ahead*” or begin their reading at any section of the report, as each paper may stand alone or may be used in conjunction with any or all of the others.

“Information Technologies in Education: A Survey of Uses and Issues” is intended for readers who are new to technology and its use in teaching and learning. Experienced educational technology users may choose not to read this paper or merely to review its contents.

### **Information about NFIE**

The National Foundation for the Improvement of Education empowers public education employees to innovate, take risks, and become agents for change to improve teaching and learning in our society. As the foundation of the National Education Association, NFIE believes that all students can learn and that quality education begins with teachers.

NFIE’s work is rooted in the belief that teachers’ professional development is a cornerstone of reforms that heighten student achievement. The foundation helps teachers to take responsibility for the quality of the profession; play a leadership role in the development of research and policy affecting public education; and acquire skills, knowledge, and experience that contribute to student success.

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