THE POWER OF THE INTERNET FOR LEARNING

Moving from Promise to Practice

REPORT OF THE WEB-BASED EDUCATION COMMISSION TO THE PRESIDENT AND THE CONGRESS OF THE UNITED STATES

The Web-based Education Commission

Honorable Bob Kerrey
United States Senator, Nebraska
(Chair)

Honorable Johnny Isakson
United States Representative, 6th District, Georgia
(Vice Chair)

Patricia S. Abraham
Professor
Department of Technology and Education
Mississippi State University
Starkville, Mississippi

Alan Arkatov
Chair and Founder
OnlineLearning.net
Chair, California Postsecondary Education Commission, Los Angeles, California

George Bailey
Assistant to the Vice President for Research
The University of Montana, Missoula, Montana

Honorable Jeff Bingaman
United States Senator
New Mexico

Richard W. Brown
Director of Instructional Services
Walden University
Minneapolis, Minnesota

Susan R. Collins
Senior Vice President and General Manager
bigchalk.com
Berwyn, Pennsylvania

Honorable Michael B. Enzi
United States Senator
Wyoming

Honorable Chaka Fattah
United States Representative, 2nd District
Pennsylvania

John Gage
Director of Science
Sun Microsystems, Inc.
Palo Alto, California

Richard J. Gowen
President
South Dakota School of Mines and Technology
Rapid City, South Dakota

Douglas R. King
President and CEO
St. Louis Science Center
St. Louis, Missouri

Florence McGinn
Teacher
Hunterdon Central Regional High School
Flemington, New Jersey

Nancy Pfund
Managing Director
Chase H&Q
San Francisco, California

David Winston
Senior Vice President
Fabrizio, McLaughlin, and Associates
Alexandria, Virginia

REPORT OF THE
WEB-BASED EDUCATION COMMISSION

DECEMBER 2000

THE POWER OF THE INTERNET FOR LEARNING:

MOVING FROM PROMISE TO PRACTICE

Senator Bob Kerrey
Chair

Representative Johnny Isakson
Vice Chair

Washington, DC

Acknowledgements

An effort as far-reaching as that taken on by the Web-based Education Commission could not have been possible without the invaluable assistance of many talented individuals. Ericka Miller, legislative assistant to Sen. Bob Kerrey and Glee Smith, legislative director to Rep. Johnny Isakson, provided continuous advice, support, and thoughtful review throughout our work. Claudia Pharis-Weiss, chief of staff to Rep. Chaka Fattah; Carmel Martin, senior policy advisor to Sen. Jeff Bingaman; and Raissa Geary, legislative assistant to Sen. Michael B. Enzi, also made significant contributions.

In addition, we wish to acknowledge the tremendous efforts of several others: Web site experts Vickie Bender and Paulette Palladino, as well as Julie Smoragiewicz of the South Dakota School of Mines and Technology; A. Lee Fritschler, Maureen McLaughlin, Linda Roberts, and Jay Noell of the U.S. Department of Education; Tricia Fitzgerald of Sun Microsystems, Inc.; Claudia Huff, Tom Horton, and Patricia Bartlett of the Georgia Institute of Technology; Cheryl Lemke of the Metiri Group; Michele Blair of Compaq Computer Corporation; and the students in the Technology and Education Department classes taught by professors Anna Hillman and Patti Abraham at Mississippi State University.

Finally, the Commission is deeply grateful to the hundreds of individuals and organizations that participated in our yearlong hearings, meetings, and proceedings; provided us with live and online testimony; and assisted us in developing a comprehensive report.

The Power of the Internet for Learning:
Moving from Promise to Practice

TABLE OF CONTENTS

FOREWORD

The Internet is a powerful new means of communication. It is global, it is fast, and it is growing rapidly. Reaching to the far corners of the earth, the Internet is making the world at once smaller and more connected, transmitting information at nearly real-time speed. An estimated 377 million people are currently using the Internet, only half of whom are in the United States. The World Wide Web is bringing rapid and radical change into our lives—from the wonderfully beneficial to the terrifyingly difficult.

For education, the Internet is making it possible for more individuals than ever to access knowledge and to learn in new and different ways. At the dawn of the 21st Century, the education landscape is changing. Elementary and secondary schools are experiencing growing enrollments, coping with critical shortages of teachers, facing overcrowded and decaying buildings, and responding to demands for higher standards. On college campuses, there is an influx of older, part-time students seeking the skills vital to success in an Information Age. Corporations are dealing with the shortage of skilled workers and the necessity of providing continuous training to their employees.

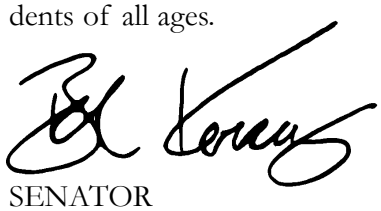
The Internet is enabling us to address these educational challenges, bringing learning to students instead of bringing students to learning. It is allowing for the creation of learning communities that defy the constraints of time and distance as it provides access to knowledge that was once difficult to obtain. This is true in the schoolhouse, on the college campus, and in corporate training rooms.

The power of the Internet to transform the educational experience is awe-inspiring, but it is also fraught with risk. As legislators and community leaders, we have the responsibility to develop policies and make informed decisions to ensure that new technologies will enhance, and not frustrate, learning. That is why Congress established the Web-based Education Commission.

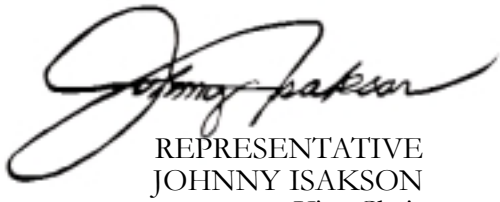
For the past year we have been chairing an effort that has explored the ways in which the Internet is changing the delivery of education. Along with Senators Jeff Bingaman and Michael Enzi, Representative Chaka Fattah, and a distinguished group of education and business leaders, the Commission has heard about the tremendous power of the Internet to empower individual learners and teachers. We have also heard about the barriers that frustrate learning in this new environment. Our witnesses urged us to "think big" as we addressed the challenges of a rapidly changing educational landscape.

The report we are now submitting to the President, to Congress, and to the nation reflects the cumulative work of our Commission and a consensus of our findings. It is a call to action to all of those who must be involved if we are to implement real and positive change—policymakers at the federal, state, and local levels; students and educators; parents; communities; and the private sector. No one group can bring about this change alone.

The Internet is a promising tool. Working together, we can realize the full potential of this tool for learning. With the will and the means, we have the power to expand the learning horizons of students of all ages.



SENATOR
BOB KERREY
Chair



REPRESENTATIVE
JOHNNY ISAKSON
Vice Chair

Executive Summary

Although web-based education is in its earliest phase, it holds extraordinary promise.

The bipartisan, congressional Web-based Education Commission set out to discover how the Internet is being used to enhance learning opportunity for all learners from pre-kindergarten through high school, at postsecondary colleges and universities, and in corporate training.

In the course of our work, we heard from hundreds of educators, policymakers, Internet pioneers, education researchers, and ordinary citizens who shared their powerful visions and showed us the **promise of the Internet—**

To center learning around the student instead of the classroom

To focus on the strengths and needs of individual learners

To make lifelong learning a practical reality

We heard that the Internet enables education to occur in places where there is none, extends resources where there are few, expands the learning day, and opens the learning place. We experienced how it connects people, communities, and resources to support learning. We witnessed how it adds graphics, sound, video, and interaction to give teachers and students multiple paths for understanding. We learned that the Web is a medium today's kids expect to use for expression and communication—the world into which they were born.

And we were told first-hand that the Internet could result in greater divisions between those with access to the opportunities of web-based learning, and those without access.

We also understood that the Internet is not a panacea for every problem in education.

By the end of our work, we were able to identify the key barriers that are preventing the Internet from realizing its full potential for enhancing learning. The Commission was urged to help the nation better understand these barriers and offer its recommendations for addressing them.

Based on the findings of our work, the Commission believes a national mobilization is necessary, one that evokes a response similar in scope to other great American opportunities—or crises: Sputnik and the race to the moon; bringing electricity and phone service to all corners of the nation; finding a cure for polio.

Therefore, the Commission is issuing a call to action to:

- **Make powerful new Internet resources, especially broadband access, widely and equitably available and affordable for all learners.** The promise of high quality web-based education is made possible by technological and communications trends that could lead to important educational applications over the next two to three years. These include greater bandwidth, expansion of broadband and wireless computing, opportunities provided by digital convergence, and lowering costs of connectivity. In addition, the emergence of agreement on technical standards for content development and sharing will also advance the development of web-based learning environments.

- **Provide continuous and relevant training and support for educators and administrators at all levels.** We heard that professional development—for preK-12 teachers, higher education faculty, and school administrators—is the critical ingredient for effective use of technology in the classroom. However, not enough is being done to assure that today's educators have the skills and knowledge needed for effective web-based teaching. And if teacher education programs do not address this issue at once, we will soon have lost the opportunity to enhance the performance of a whole generation of new teachers, and the students they teach.

- **Build a new research framework of how people learn in the Internet age.** A vastly expanded, revitalized, and reconfigured educational research, development, and innovation program is imperative. This program should be built on a deeper understanding of how people learn, how new tools support and assess learning gains, what kinds of organizational structures support these gains, and what is needed to keep the field of learning moving forward.

- **Develop high quality online educational content that meets the highest standards of educational excellence.** Content available for learning on the Web is variable: some of it is excellent, much is mediocre. Both content developers and educators will have to address gaps in this market, find ways to build fragmented lesson plans into full courses and assure the quality of learning in this new environment. Dazzling technology has no value unless it supports content that meets the needs of learners.

- **Revise outdated regulations that impede innovation and replace them with approaches that embrace anytime, anywhere, any pace learning.** The regulations that govern much of education today were written for an earlier model in which the teacher is the center of all instruction and all learners are expected to advance at the same rate, despite varying needs or abilities. Granting of credits, degrees, availability of funding, staffing, and educational services are governed by time-fixed and place-based models of yesteryear. The Internet allows for a learner-centered environment, but our legal and regulatory framework has not adjusted to these changes.

- **Protect online learners and ensure their privacy.** The Internet carries with it danger as well as promise. Advertising can interfere with the learning process and take advantage of a captive audience of students. Privacy can be endangered when data is collected from users of online materials. Students, especially young children, need protections from harmful or inappropriate intrusions in their learning environments.

- **Sustain funding—via traditional and new sources—that is adequate to the challenge at hand. Technology is expensive, and web-based learning is no exception.** Technology expenditures do not end with the wiring of a school or campus, the purchase of computers, or the establishment of a local area network. These costs represent just the beginning.

The issue before us now is how to make good on the Internet's power for learning and how to move from promise to practice.

The Web-based Education Commission calls upon the new Congress and Administration to embrace an "e-learning" agenda as a centerpiece of our nation's federal education policy.

This e-learning agenda should be aimed at assisting local communities, state education agencies, institutions of higher education, and the private sector in their efforts.

The moment is at hand.

We urge the new President and the 107th Congress to seize this opportunity and to focus on ways in which public law can be modified and changed to support, rather than undermine, the technology that is so dramatically changing education.

- **We call on federal and state governments to make the extension of broadband access for all learners a central goal of telecommunications policy.**

  We urge federal and state officials to adopt a policy framework that will help accelerate broadband deployment in education quickly and effectively. The E-rate program, which has brought 21st Century telecommunications into the nation's schools and libraries, has provided a dramatic boost. Individual state efforts have shown promise and success. Local and state policymakers should consider complementary efforts focused on educational applications of broadband access.

- **We call upon policymakers at all levels to work with educational institutions and the private sector to support the continuous growth of educators through the use of technology.**

  We encourage continuing federal and state support for initiatives and models that make just-in-time, just-what's-needed training and support available to educators. The reauthorization of the Elementary and Secondary Education Act and subsequent Higher Education Act reauthorization offer the opportunity to make this happen and to incorporate the best thinking and practices identified by this Commission. Partnerships that bring together the federal government, state and local agencies, the private sector, and educational institutions offer the best promise of assuring continuing teacher empowerment and growth with technology.

- **We call upon the federal government to create a comprehensive research, development, and innovation framework for learning technology.**

  We recommend establishing a benchmark goal for federal research and development investment in web-based learning, consistent with similar benchmarks in other industry segments. This framework would focus on high payback targets of educational opportunity and support the creation of learning communities and tools for collaborative knowledge building and dissemination among researchers, teachers, and developers.

- **We call upon the public and private sectors to join forces in developing high quality content and applications for online learning.**

  At the federal level, the Commission recommends that Congress articulate content development priorities, provide seed funding for high need areas, and encourage collaboration and partnerships between the public and private sectors in the development and distribution of high quality online materials. The federal government should work with all agencies and programs to adopt technical standards for the design of online courses, meta tagging of digital content, and universal design standards for access for those with disabilities.

  The Commission recommends that the education community develop standards for high quality online courses. The current voluntary system of accrediting higher education institutions and programs should continue but with better clarity for the consumer regarding online options. The Commission recommends the convening of state and regional education accreditors and organizations to build common standards and requirements for online learning programs, courses, and certifications comparable to the standards required for onsite programs.

- **We call upon Congress, the U.S. Department of Education, and state and regional education authorities to remove barriers that block full access to online learning resources, courses, and programs while ensuring accountability of taxpayer dollars.**

  The Commission encourages the federal government to review and, if necessary, revise the "12-hour rule," the "50 percent rule," and incentive compensation requirements that are creating barriers to students enrolling in online and distance education courses.

  The Commission encourages national, state, and regional education policymakers to increase cross-state regulatory and administrative cooperation in web-based education. We also call upon states to develop common and appropriate policies regarding credits, faculty compensation, accreditation, licensing, articulation, student services, and programs to reach underrepresented student populations.

  The Commission endorses the U.S. Copyright Office proposal to convene education representatives and publishers to build greater consensus and understanding of the "fair use" doctrine in its application to online learning.

- **We call upon parents, the education community, and the private sector to develop and adopt privacy and protection safeguards to assure that learners of all ages are not exploited while participating in online learning activities.**

  The Commission believes that filtering and blocking software alone is of limited value. Instead, we recommend encouraging developers and educators to collaborate in creating noncommercial, high quality educational "safe zones" on the Web. We also recommend that schools, districts, and states develop and promote programs for the safe, wise, and ethical use of the Internet.

  The Commission also believes some adjustments to the Children's Online Privacy and Protection Act may be necessary to allow educational exemptions for the collection of identifiable student data online with appropriate parental consent.

- **Finally, we call upon the federal government, states, localities, and the private sector to expand funding initiatives and to develop new models to bring these policies to reality.**

  The Commission believes these initiatives could include tax incentives, additional public-private partnerships, increased state and federal appropriations, and the creation of a learning technology trust fund. The Commission encourages states and localities to aggregate their market strength as a way of bringing advanced technologies to education at a considerably lower cost.

The question is no longer *if* the Internet can be used to transform learning in new and powerful ways. The Commission has found that it can. Nor is the question *should* we invest the time, the energy, and the money necessary to fulfill its promise in defining and shaping new learning opportunity. The Commission believes that we should. We all have a role to play.

It is time we collectively move the power of the Internet for learning from promise to practice.