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Educating the 21st Century Citizen White Paper

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Introduction

The speed of change has become a defining characteristic of the information age¹ in which we live. The socio-economic impact of this shift is global and far-reaching—connecting people, families, and local communities in new ways, while at the same time increasing the global connectedness of us all.

The first part of the 20th century saw a fundamental change with the shift from a predominately agricultural economy to a manufacturing economy. The advent of the PC and the Internet rapidly moved the economy from factories and manufacturing to a predominance of commerce and office work with the information age. These shifts have had enormous impact on the nature of everyday life, the economy, and work. Yet despite these changes, our education systems remain much the same.

The current architecture of education was created at the end of the last century, when 90 percent of the population left school after the eighth grade and when the industrial revolution began to replace an economy built on agriculture.² One hundred years ago, “the three R’s” served well enough for one to provide for one’s family and to be an active citizen. With the rise of manufacturing, in addition to those basic skills, employers looked for workers that could perform one task repeatedly and accurately and not to exceed the upper or lower limits of industrial specification. Now, 21st century businesses seek employees who can problem solve, communicate effectively, and engage in ongoing decision making based on critical thinking skills and an understanding of complex systems.

In the information age, knowledge is a differentiator in an increasingly literate society requiring more education and continual learning. The three R’s are no longer enough.

Every citizen today needs access to ongoing and timely education to fully participate in the information age and to realize its potential for removing limitations and creating opportunities.

A Nation at Risk, published in 1983, provoked widespread educational reform efforts across the country. Twenty years later, the impact of science, technology and globalization have called for even greater reform. This is especially necessary because of their ubiquitous impact on society, because employers are facing skills shortages, and because the economy requires a new set of worker competencies. Employers indicate that technical skills alone are not enough.³ What are the education requirements for the 21st century citizen? What has changed? What *should* change? What needs to stay the same?

The call for educational change and a program to address a set of 21st century skills is being made by educators, policy makers, industry, parents, and learners of all ages. In addition to our corporate programs and efforts, Microsoft has been privileged to participate in national commissions and partnerships to address these compelling questions for the 21st century learner. What follows will reference some of the investigations and outcomes of these partnerships: each formed with the goal of keeping learning relevant for learners of all ages by leveraging the tools of our time. Teaching and learning models from our academic customers and key learning from the Microsoft Education Solutions Group are also included in this work.

Each period of history is defined by both the tools that exist and the ways in which those tools are used. The transition to a new century gives us pause to define how learning—and perhaps the learner—has changed and what new tools enable us to bring the best we can offer to educate our world. This paper is the first in a series that will examine the changes in learning, and the environment that best supports learners in providing a new vision for living, learning, and working for life.

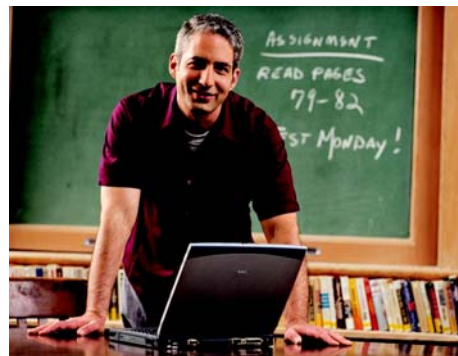
1 Oblinger, Diana; Verville, Anne-Lee, What Business Wants from Higher Education, 1998.

2 O’Banion, Dr. Terry, A Learning College for the 21st Century, 1997, p. 8

3 Bouncing Back, Information Technology Assoc. of America (ITAA) May, 2002

The 21st Century Student—New Needs and New Tools

The profile of what we call a student is constantly evolving. Once defined by the “school age” of 5 to 24 years old, the “traditional” student attended school full-time. Upon graduation, access to further education became difficult, if not impossible, while assuming responsibilities of jobs, families, and adult commitments. In the past decade, the PC and the Internet have transformed the access adults have to educational opportunities, “making it possible for more individuals than ever to access knowledge and to learn in new and different ways.”⁴



The Internet has expanded access to information, removing both the teacher and student’s dependencies on a limited range of information sources. Education is no longer bound by the limits of the teacher, textbook, or the reference books in the school library. Rather it is limited only by the student’s interest. These new learning models enable the teacher to serve as learning facilitator, mentor, and guide through subjects that do not require students to spend a prescribed amount of time in a physical classroom. The Internet now brings access to the libraries of the world to remote schools and homes. Technology has accelerated the growth and expanded the definition of the “non-traditional” student profile.

New learning models have also emerged with the growth in number of home schools and charter schools. Non-traditional learning alternatives are increasing in popularity, enabling more of today’s students, of any age, the opportunity to develop more personalized learning experiences tied to their individual learning goals and lifestyles.

Digital Inclusion

We all recognize that access to technology is not evenly distributed. A disparity still exists between the digital haves and have-nots. Only 31 percent of students enjoy Internet access at home. 56 percent of students in the United States have Internet access at school.⁵

But it’s not just access to technology that is important in creating a digitally-inclusive world. Of even greater importance is acquisition of “digital literacy”—the knowledge and skills necessary to use these technologies and the ability to adapt to the rapid pace of their change which is the hallmark of their ongoing development. The understanding of how technologies work, and to build on this knowledge to adapt to newer devices, provides the opportunities to succeed in the workplace and actively participate in society.

Judy West, a Dallas-based author, consultant, and cyber-recruiting expert, indicated in a recent article⁶ that workers who lack Internet and technology savvy are “the equivalent of the immigrants coming to the New York harbor for the first time. The immigrants who made the investment to learn how to speak, read, and write English fluently got the higher-paying jobs. Those who learned only to speak it got medium- to low-paying jobs, and those who didn’t learn English at all got manual labor, ditch-digging, and other low-paying jobs.”

4 The Power of the Internet for Learning, Report of the Web-Based Education Commission to the President and the Congress of the U.S., Foreword, Sen. Bob Kerrey, Chair; Rep. Johnny Isakson, Vice Chair, Dec. 2000

5 Report of the Web-Based Education Commission to the President and the Congress of the U.S., December 2000, p. 26

6 Enbysk, Monte, bCentral Magazine article, “Tech Skills the Ticket to Best Jobs”, 2002. www.bcentral.com/articles/enbysk/142.asp

The ability to access, use, and adapt to the tools of our time is becoming a necessary skill set for academic and career success. Most schools are attempting to integrate computer skills into the classroom today, and John Bailey, Director of the U.S. Department of Education's Office of Instructional Technology, indicated that technology will be essential to implementing the requirements of President Bush's No Child Left Behind Act.⁷ Digital inclusion is imperative for all 21st century citizens.

Gallaudet Brings IT Skills to Degree Programs Designed for Deaf Students

The mission of Gallaudet University, in Washington, D.C., is to serve as a comprehensive, multipurpose institution of higher education for deaf and hard of hearing citizens of the United States and of the world. Deaf and hard of hearing students may choose from over 40 major fields of study, including computer science, digital media, and computer information systems.

In the school year 2002–2003, Gallaudet participated as a Microsoft IT Academy offering classes leading to Microsoft IT professional certifications to students as part of their academic degree programs offering:

- Three semester-long courses offered via:
 - Professional Study and Training
 - CIS program for undergraduate and graduate students and working adults
- Five Saturday certification preparation classes

Gallaudet achieved several goals with these programs:

- Promoting the acquisition of gainful employment for their students
- Offering opportunities to deaf and hard of hearing working adults to support career advancement
- Supporting faculty skill development in IT

Citizens with Disabilities

In a discussion of digital inclusion, we must consider that one in five Americans aged 16 and older has a disability of some kind. As our population ages, the number of learners with vision, hearing, and physical limitations will continue to grow. Among Americans of all ages nearly 60 percent of those with disabilities have never used a personal computer compared with 25 percent of those without a disability.⁸ Students with disabilities comprise 11 percent of preK–12 and 7 percent of beginning post-secondary students.⁹

One of the most empowering uses of technology is “assistive technology” that helps people with disabilities interface with the computer. People who are sight impaired interface with the computer through speech synthesizers, people with hearing difficulties are assisted with captioning, and people without limbs can use alternative input devices that enable communication through the global medium of the Internet. These assistive technologies not

⁷ eSchool News, September 2002

⁸ Report of the Web-Based Education Commission to the President and the Congress of the U.S., December, 2000, p. 27

⁹ Ronnkvist, Dexter & Anderson. Op. cit. endnote 17, p. 5

only empower people with disabilities, they are ultimately making the computer interface easier for us all.

Educators are mandated by law, through the Americans with Disabilities Act, to offer equitable access to technology for all students. Technology companies such as Microsoft are working to advance assistive technologies, including guidelines and tools that are incorporated in their products and Web sites.¹⁰ Designing accessibility into an Internet site or a course at the beginning is far less expensive than after the fact. Designs that create barriers harm everyone, not just people with disabilities.¹¹

Access to computer skills is transformational, empowering people with disabilities to obtain jobs and achieve independence as never before. This access should not be denied when the technology exists to bring equity of access. We would assert that all Web sites and all distance learning programs should enable access to the widest possible audience.

¹⁰ Microsoft Accessibility, www.microsoft.com/enable

¹¹ Report of the Web-Based Education Commission to the President and the Congress of the U.S., December, 2000, p. 30

Early Learning—New K–12 Learning Models

Important demographic shifts are taking place in the K–12 sector underscored by the size and scope of the traditional student population and the changing learning and cultural environment. Consider:



- Enrollment in elementary and secondary schools will increase by 2.2 million students in the next 10 years (from 53.5 million in 2002 to approximately 55.7 million in 2012).¹²
- Student populations in elementary and secondary schools are becoming increasingly ethnically diverse.¹³
- The number of graduates has increased from the 2.5 million mark in 1991–92 to about 2.9 million in the 2001–02 school year.¹⁴
- Home schooling is on the rise (4,000 percent increase in a 20-year span).¹⁵
- More than 2,300 public charter schools serve more than 500,000 students nationwide (August 2001).¹⁶

The number of students filling the educational pipeline is growing. And these students are set apart from earlier generations through their diverse cultural exposure, global media influences, and familiarity with digital technologies. While technology has impacted every generation, the new “millennial” generation is exposed to globe spanning communication and entertainment vehicles, such as online gaming, and has embraced tools that give them instant access to information, their families, and each other.

Millennials

Millennials are defined as the generation born after 1982. As preschoolers, they were acquainted with cell phones, pagers, and PCs—and for some, stepping into school means stepping back in time to chalkboards and overhead projectors as state of the art. One need only visit a local mall to see how today’s youth have embraced new technologies to interact with each other and gain information. As a result of technology touching just about every aspect of their lives, students may feel that they are more Internet-savvy than their teachers. They use the Internet for school, work, and leisure, and often have a perception that the use of technology in schools is inadequate.¹⁷

¹² National Center for Education Statistics, Mini-Digest of Statistics 2002, p. 10

¹³ National Center for Education Statistics, Mini-Digest of Statistics 2002, p. 13

¹⁴ National Center for Education Statistics, Mini-Digest of Statistics 2002, p. 39

¹⁵ Fox News Report, Contributors: Trace Gallagher and Samantha Jonas, May 19, 2003

¹⁶ Education Commission of the States, August 2001. (NEA Report: <http://www.nea.org/charter>)

¹⁷ Oblinger, Diana, “Boomers, Gen-Xers, and Millennials: Understanding the ‘New Students,’” p. 3

Consider:

- 41 percent use e-mail and instant messaging to contact teachers or schoolmates about class work.
- 81 percent use e-mail to stay in touch with friends and relatives.
- A slight majority (56 percent) prefer the Internet to the telephone.¹⁸
- Gaming is a favorite form of recreation
 - 30 million gaming consoles sold in 2002.¹⁹
 - Online gaming will increase six-fold by 2007 reaching 13 million subscribers.²⁰

Imagine the power of this student interest in technology and the potential for developing their education as a consequence of their behavior. 140,000 students from 200 countries, for example, are eager participants in TakingITGlobal (TIG)²¹—an international organization led by youth, empowered by technology, collaborating on concrete learning projects that address such global challenges as water pollution, political correctness, and rehabilitating criminals.

22,000 Students Register for Technology-based Virtual Voting Project

The Irving Independent School District in Irving, Texas has worked hard to connect each of the campuses in its school district to use technology to create new project-based learning opportunities.

During the last presidential election, middle and high school students across four of the district's campuses collaborated on the "Virtual Voting 2000" project. Middle school students wrote an Access database to register "voters," record and track the results. The high school students then integrated that database into an interactive Web page so that students from all 30 schools within the district could register and vote.

More than 22,000 students registered, and more than 18,000 voted. Results were then tallied and charted using Excel spreadsheet to compare the student results with the local, state and national results.

"Virtual Voting 2000" provided more than a valuable civics lesson. It taught students how to work in groups, collaborate with others and how to apply the technology they learned into a real-world example.

Harnessing this passion for technology and applying it to learning will, as Bill Gates said in *The Road Ahead*, "empower people of all ages, both inside and outside the classroom, to learn more easily, enjoyably, and successfully than ever before. The basic purpose of the PC—managing information to support thinking—aligns superbly with the mission of educational institutions. Improving education is the best investment we can make because downstream benefits flow to every part of society."²²

18 Oblinger, Diana, "Boomers, Gen-Xers, and Millennials: Understanding the 'New Students,'" p. 4

19 Smith, Erika D., Beacon Journal, June 1, 2003, references: Screen Digest Research

20 Price Waterhouse Coopers Entertainment and Media Outlook 2003–2007. Silicon Valley News, Multimedia/Internet News, June 12, 2003.

21 TakingITGlobal: <http://www.takingitglobal.org/hom.html?width=1024>

22 Gates, Bill, *The Road Ahead*, p. 208

Post-Secondary Education and the Rise of the Non-Traditional Student

Demographics paint a dramatically changing picture of today's college student. Economic and work pressures are forcing students to change how they seek higher learning. With new learning models and access vehicles, adult workers are now able to pursue formal education as never before. Driven by the desire for personal and career growth, baby boomers and their retired parents are taking advantage of the new access to education along with their children. Today's post-secondary students are characterized here as *traditional* and *non-traditional*, each pursuing their own personal education goals:

Traditional college students continue directly to post-secondary education within one or two years of graduating from high school and attend school full time. They generally fall within the age group 18–24 years old and were born after the introduction of the PC—many are also considered Millennials. Among this group:

- 20 percent started using a computer between the ages of 5 and 8.
- Almost all used a computer by the time they were 16 to 18.
- 84 percent own a computer; 25 percent own more than one.
- Students spend an average of 11 hours per week online.²³

A fundamental change in the last decade of higher education has been the integration of technology to support instruction. For example:

- 70 percent of college classes use e-mail versus 20 percent in 1995.
- 50 percent of college courses use Internet-based resources versus 11 percent in 1995.
- 35 percent of college courses have a Web page versus 9 percent in 1996.²⁴

In that time, some higher education institutions have begun requiring entering students to own a personal PC or laptop. This change enables 24/7 access for students in doing research, communicating by e-mail with professors, and completing coursework without waiting for an available PC during open lab hours.

The learning experience for the traditional student in the information age brings global access to research information and the worldwide storehouses of knowledge, where the learning lab and the library never close. Students are adding modern day learning tools such as the Internet, software applications, and multi-media to their learning skill set, understanding when and how to use them, and being able to select the right tool for the job at hand.

But the most noticeable change in higher education has been in the rise of the *non-traditional* student who now has access to learning not available through traditional classrooms and schedules. The hunger for learning by adults is demonstrated by data from the National Center for Education Statistics (NCES):

- In 1999–2000, 73 percent of all undergraduates were in some way “non-traditional.”²⁵
- More students are over the age of twenty-five.²⁶

23 Oblinger, Diana, “Boomers, Gen-Xers, and Millennials: Understanding the ‘New Students,’” p. 4

24 Green, Kenneth C., “Campus computing 2002”, the 13th National Survey of Computing & IT in American Higher Education, p. 9

25 National Center for Education Statistics, “Special Analysis 2002: Nontraditional Undergraduates,” accessed online on May 29, 2003, <http://nces.ed.gov/programs/coe/2002/analyses/nontraditional/index.asp>

26 Oblinger, Diana, “Boomers, Gen-Xers, and Millennials: Understanding the ‘New Students,’” p. 2

- 77 million adults (over 24 years of age) were estimated to be taking postsecondary courses in 1999 (the fastest growing segment in higher education).²⁷
- Just 16 percent of college students fit the traditional profile of 18–22 years old, attending full time and living on campus in 1999.²⁸

Adult learning and continuing education programs are growing at two-year and four-year institutions that now accommodate work, childcare schedules, and the commitments of adult students. The American Association of Community Colleges (AACCC) reports:

- 49 percent of their 10.4 million students are non-credit students.
- 28 percent of community college credit students already have their bachelor's degree.
- The average age of a community college student in our nation is 29.

Rio Salado—The College Without Walls

One of the nation's leading providers of distance learning, Rio Salado has been providing students access to learning anytime/anyplace since 1978. Based mainly on Internet delivery and with a focus of workforce training, Rio Salado now offers over 300 courses: 12 Associate degree programs and 38 certificate programs, including teacher preparation, clinical dental assisting, and public administration. Students may begin classes almost immediately with most classes starting every two weeks throughout the year.

Providing affordable, high quality college education for working adults was the driving mission for Rio Salado's distance learning model. Receiving national recognition through several awards, they currently serve 27,000 credit students who have been able to advance their career or prepare for a new one without setting foot on campus. Students register, order books and materials, apply for scholarships and financial aid, and receive academic advising and tutoring—all with the click of a mouse. Serving the needs of their adult students and the workforce of their community and beyond, Rio Salado is one of the ten colleges in the Maricopa Community College District, in Arizona.

Technology has been a contributor to the rise of the non-traditional student, providing access and flexibility for adult learners heretofore unknown. Not since the government instituted the GI Bill in the 1940s have colleges seen such a dramatic shift in their student population.

With this level of interest from adult learners for career development, educators and local industry have an important opportunity to connect education and skills to employment needs. British Open University is an example of how schools can now extend their educational facilities to overcome distance and time. This fundamental change has the exciting potential to deliver further learning opportunities to more people enabling a more educated global citizenry.

²⁷ Levine, Arthur. The Remaking of the American University. Presentation made at The Blackboard Summit. Washington, D.C., March 2000.

²⁸ Same as 40

Educating the 21st Century Workforce

Considering socio-economic trends, technology, and the evolving requirements for learning, there is a call for educational reform to include a set of educational experiences for students targeted to employment needs. Fueled by the economy and corporate downsizing, the call for reforms would put a stronger focus on career preparation at all levels of education.

At a time when 85 percent of current jobs require education beyond high school (up from 65 percent in 1991),²⁹ it is critical to consider stakeholders and evolve education while bridging the gap to employability skills through the cooperation and input of education, business, government, and students.

In the information age the demand for manual skills is declining. The share of manufacturing jobs versus the total number of jobs was expected to decline from 13 percent in 2000 to 11 percent in 2001.³⁰ This means educational institutions must fill the nation's labor force with educated workers that can meet the demands of our information economy. Just as schools adapted to meet the needs of an agricultural and Cold War society, once again schools must change to accommodate the explosion of information technology and its impact on the workforce and our culture.

Business Skills and Certifications

The ability of a worker to *apply* their education in a real-world setting is not necessarily represented by diplomas and degrees. Many employers and career tracks now require competency-based certifications. The medical, automotive, and technology fields are examples of industries that value these credentials in addition to an individual's formal education.

Certification programs show how businesses can work with educational institutions to identify and create curricula that are meaningful to both the employer and employee and encourage the lifelong learning process. Certifications are increasingly valued by students, incumbent workers and employers as proof of competency and a supplement to formal education.

Life Skills

But education and technical skills aren't enough. The effectiveness of the most educated workers is diminished if they lack the "soft" skills to work effectively with others. In a poll of employers for employability skills for new hires, interpersonal skills ranked highest in level of importance.³¹ Such attributes as values, the ability to work without supervision, and working well with others, are examples of these skills. It is clear that education tied to employability goals must include building interpersonal skills as part of the core learning competencies.

29 Report of the Web-Based Education Commission to the President and the Congress of the U.S., December 2000, p. 4

30 Bureau of Labor Statistics, "BLS Releases 2000–2010 Employment Projections," accessed online on May 29, 2003 at <http://www.bls.gov/news.release/ecopro.nr0.htm>

31 ITAA Report, When Can You Start?, April 2001

Education and Industry: Working Together for 21st Century Skills

Educators, government, and industry leaders are working together to help reform education to assure that a basic level of digital literacy is acquired by today's students. Microsoft is participating with the following organizations and efforts to assist schools in developing standards for 21st century skills.

Transitions and Academic Rigor—CCTI

At the secondary-post secondary level, the Career and College Transitions Initiative (CCTI) is working to increase rigor in the American education system through identifying model schools and core competencies for the 21st century learner, worker, and citizen. Facilitated by the League for Innovation in the Community College, CCTI is a project of the U.S. Department of Education, Office of Vocational and Adult Education.³² Considering the building blocks that begin in the primary grades, this initiative has the focus of learning that bridges grade levels and further education to employment and life skills.

Transcripts for Non-Credit Learning

The American Association of Community Colleges (AACC) and its affiliated council—the National Council of Continuing Education and Training (NCCET)—are spearheading an effort to assess non-credit skills and include them on student transcripts.³³ An invitational colloquium held in May 2003 will have a resulting white paper of recommendations to the AACC for this important recognition of non-traditional learning. Addressing the “soft skills” demanded by industry, an early exemplar is the Critical Life Skills Transcript implemented by Waukesha County Technical College—an assessment of communication skills, analytic skills, group effectiveness skills and personal management skills.

No Child Left Behind (NCLB)—The Partnership for 21st Century Skills

The Partnership for 21st Century Skills is a consortium of businesses and non-profit organizations created to help schools address change in alignment with 21st Century requirements in accordance with NCLB and in alignment with 21st century requirements, recognizing that those skills are a continuum to prepare students for life and work.

In addition to Microsoft, the Partnership includes AOL Time Warner, Apple Computer, Cable in the Classroom, Cisco Systems, Dell Computer Corporation, The National Education Association, and SAP. Along with Education partners—the U.S. Department of Education and the Appalachian Technology in Education Consortium—the Partnership is defining new skill sets and education models to produce more highly-skilled workers and better prepare citizens across all ethnic, geographic, and economic strata.

³² CCTI, League for Innovation, U.S. Dept of Education, Office of Vocational & Adult Education, www.league.org

³³ Invitational Colloquium on Credentialing, NCCET, Milwaukee, WI, May 2003

In its report released in June 2003, the Partnership for 21st Century Skills identified the following as central to 21st century learning, considering life skills, employability skills, and core competencies:

1. Emphasize core subjects
2. Emphasize learning skills
3. Use 21st century tools to develop learning skills
4. Teach in a 21st century context
5. Create 21st century content
6. Use 21st century assessments to measure 21st century skills³⁴

Emphasize Core Subjects

Core subjects are the foundation on which new skills can be learned. The NCLB Act provides standards and requires assessments to ensure that students are meeting minimum competency requirements, in English, reading or language arts, mathematics, science, foreign languages, civics, government, economics, arts, history, and geography.³⁵

Emphasize Learning Skills

Additional to the core subjects, students need to know how to apply these skills by thinking critically, applying knowledge to new situations, analyzing information, comprehending new ideas, communicating, collaborating, solving problems, and making decisions.³⁶

Use 21st Century Tools to Develop Learning Skills

Students will need to understand how to use the tools available to them in the 21st century, and how to apply them to their home and work life.

- 21st century tools: computers, software, networking, media tools and other technologies.
- Learning skills: process-oriented and cognitive skills including:
 - Information/Communication Skills
 - Thinking/Problem Solving Skills
 - Interpersonal/Self-Direction Skills³⁷—including values, of increasing importance today

Teach in a 21st Century Context

Lessons have more impact if students can relate them to real-world examples. By providing relevant and current contexts for lessons, education moves from being purely academic, to where students can make a connection between the classroom and their own lives.³⁸

34 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 8

35 No Child Left Behind, Title IX—General Provisions, Part A—Definitions

36 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 9

37 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 11

38 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 12

Create 21st Century Content

In addition to providing relevant *context* for 21st century learners, current, relevant *content* must be added to lessons to give students a sense of the changing world around them. The Partnership recommends the following 21st century content areas:

- Global Awareness
- Economic and Business Literacy
- Civic Literacy³⁹

Use 21st Century Assessments to Measure 21st Century Skills

Milestones must be put in place to ensure that students are learning the skills necessary for life and work in the 21st century. Standardized competency based tests are entrenched in our education system but they must be updated to assess more than basic core subjects⁴⁰.

As defined by these working groups and others, 21st century citizens will need a solid skill set of business skills and life skills. The workplace has changed dramatically from a generation ago, and will be dramatically different a generation from now. Educational systems must adapt what they teach and how they teach to equip students for success. Teachers are central to learning and the recruitment and ongoing professional development and support of teachers is critical for successful students. Teaching is so important that a separate paper in this series will have the exclusive focus of the changing role of teachers today.

39 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 13

40 "Partnership for 21st Century Skills Report. Learning for the 21st Century," June 2003, p. 16

The Global 21st Century Citizen

Learning, literacy and skills are the currency required to be a contributing citizen today. The ability to communicate, access information, and complete everyday transactions with commonly used tools and skills increases one's ability to be an active participant in life today.

Lacking 21st century skills, individuals are hampered trying to access online employment offerings or submit a job application online, reducing their employment options. They may miss the cost savings of Internet purchasing and banking online, putting more of their income into services than into sustenance or savings. They may be unaware of the convenience of filing their income tax digitally and checking their credit rating online, reducing access to a timely refund or the ability to preserve their purchasing profile. They may also miss the opportunity to access online learning after hours to attain further education, limiting their ability to advance in their job because of their work schedule. Without appropriate education, citizens lack knowledge and skills to use the tools of our time, and as a consequence suffer by exclusion.

We also assert that higher education should have the ultimate goal of preparation for life including preparation for work. Survival and the ability to flourish have direct ties to the ability to make a living. Work is a necessary part of life and education is a necessary part of work. The findings of the Partnership for 21st Century Skills, CCTI, and others support these important links between educators and industry; between education and jobs.

We believe all citizens should have equal access to meaningful education to transform their lives and benefit from the equal opportunity education provides. We urge educators, industry, and government leaders to work together to explore new ways to assure educational equity for all 21st century citizens.

While learning has changed for students in this new century, we are emboldened by the boundless opportunity presented in our lifetime. Barriers to learning are being removed for every age, ethnic group, geographic location, and learning style. Important alliances are being formed between educators, industry, and policy makers with the goal of improving education in an additive way. We are all participants in developing learning that springs from individual life goals to better prepare and educate every 21st century citizen.

This paper begins a series to provoke new thinking on learning for the 21st century. At no time more than in this information age, has education been more important or transformational—to the lives of individuals, families, communities, nations, and their global citizens. We look forward to continuing this important discussion.

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Diana has worked with educators in the Education Solutions Group at Microsoft since 1997, serving in various capacities, including Community College Relations, Worldwide Program Manager for Microsoft IT Academy, and most recently, as Program Manager for Academic Workforce Development and Faculty Professional Development for Higher Education. She currently serves on the Board of the American Association of Community Colleges (AACC), the Editorial Board of the Catalyst, and several national academic and industry advisory boards.

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