The Future of Education: A Global View

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International Association for K-12 Online Learning (iNACOL)

- **iNACOL** is the leading, international, non-profit association in K-12 online learning.
- Based in the Washington, DC metropolitan area (Vienna, VA)
- 3000+ members in K-12 districts, states, universities, researchers & online learning providers
- Provides leadership, advocacy, research, training and networking with experts in K-12 online learning.
- "Ensure every student has access to the best education available regardless of geography, income or background."
- Conference - *Virtual School Symposium (VSS)*
- www.inacol.org

World Future Society

Top 10 breakthroughs transforming life over the next 20-30 years
Best forecast data ever assembled

1. Alternative energy
2. Desalination of water
3. Precision farming
4. Biometrics
5. Quantum computers
6. Entertainment on demand
7. Global access
8. ***Virtual education or distance learning***
9. Nanotechnology
10. Smart Robots

International Trends in Online Learning

Results of the iNACOL International Survey

- Mexico
  - K-12 Digital Content, Laptop for Every Teacher, Pre-service methods using engaging digital content, new strategies
- European Union
  - IB Diploma Program Online
  - Foreign Languages
- Turkey
- Middle East
- India
  - Universal Access to K-12, Teacher Shortages, Educomp, $10 laptop project
- China
  - K-12 Digital Curriculum, Training Master Teachers for E-learning to rural areas
- Singapore Secondary Schools 100% Online
- South Korea Virtual School

England: Harnessing Technology

Strategic Objectives:

- Technology confident schools (e-maturity)
- Engaged empowered children & families
- 21st century system leadership & innovation
- World class, globally networked
  - Estimated e-learning exports at $29 billion pounds annually with China

England: Public Investment

- Already funded a VLE in every school
- E-learning credits funded approved digital content purchase by schools (2006-2008)
- Home Access programme $500m in 2008
- ENGLAND has Harnessing Technology for Next Generation Learning - Implementation Plan 2009-12 $1b

India

- Universal Access for K-12 Education in 10 years
- Need 200,000 more schools
  - 1 billion+, 70% rural population
- Shortage of good teachers
- "Leverage teachers using technology to bring to scale"
- Educomp Program digitizing learning resources (online content) in K-12 education
  - View as export opportunity
- $10 laptop

China

- China: 1.3 billion people
  - Digitized K-12 curriculum
  - Training "master" teachers to teach online
  - With online learning: increase educational opportunities to 100 million new students

Singapore

- Today
  - All teachers know how to teach online
  - 100% of secondary schools using online learning
    - Blended/hybrid learning in every classroom
  - Singapore holds E-Learning week each year
    - They close physical schools down and ensure e-learning is used for continuity of learning & disaster preparedness

Contingency Plans: H1N1

STATUS	GREEN (no/limited student infection)	YELLOW (significant student infection)	ORANGE – (significant student and staff infection)	RED – School/Campus Closures
Students	• Lessons and exams as normal • Leave of Absence (LOA) Students to access materials from e-learning system (such as a Learning Management System/LMS) if available or in alternative/hard copy formats, if not • Isolate leave of absence (LOA) students for exams	• Lectures, tutorials and laboratory sessions continue as normal • Home Quarantine Order (HQO) students to access materials from e-learning system if available, or, school provides instructional materials and assignments in alternative/hard copy formats, if not connected • Isolate sick students for exams	• Stop mass lectures and activities; replace by e-learning, if possible • Tutorial via online tutors • Laboratory sessions as normal, if possible; via online labs, if possible • HQO students to access materials from e-learning system	• E-learning only via remote access for students from various locations, including homes • Tutorial via online tutors • Hold exams on e-learning systems, if possible; otherwise postpone exams

What Students Need to Know: 21st Century Skills and ICT Literacy

The future will demand people who can express themselves effectively with images, animation, sound, and video, solve real world problems that require processing and analysis of thousands of numbers, evaluate information for accuracy, reliability, and validity; and organize information into valuable knowledge, yet students are not learning these skills in school.

Defining 21st Century ICT Literacy

- The Partnership for 21st Century Skills defined 6 key elements of 21st Century Learning
  1 . Emphasize core subjects.
  2. Emphasize learning skills.
  3. Use 21st Century tools to develop learning skills.
  4. Teach and learn in 21st century context.
  5. Teach and learn 21st century content.
  6. Use 21st century assessments that measure 21st century skills.

www.21stCenturySkills.org

"This is a story about the big public conversation the nation is not having about education… whether **an entire generation of kids will fail to make the grade in the global economy** because they can't think their way through abstract problems, work in teams, distinguish good information from bad, or speak a language other than English."

How to Build a Student for the 21st Century, TIME Magazine
December 18, 2006

"Web opens world for young Chinese . . ."

-Christian Science Monitor, May 14, 2007

- Bejing -- "Excited and emboldened by the wealth of information they find on the Internet, Chinese teens are breaking centuries of tradition to challenge their teachers and express their opinions in class. . . ."
- "Students at Tianjin's No. 1 Middle School are encouraged to challenge their history texts."
- "The Internet has given Chinese children wings," says Sun Yun Xiao, vice president of the China Youth and Children's Research Center.
- 137 million online in China at the end of 2006 (in 1999 there were just 4 million connections in China)
- 87% of urban youth in China use the Internet

Trends: Career & Workforce

- 30-50% of all workforce training and development is done through e-learning

Trends: Higher Ed Online Learning

- Sloan-C "Survey of Online Learning" titled, "Learning on Demand: Online Education in the United States in 2009" studied higher education online enrollments:
  - 1 in 4 college students take an online course
  - 4.6 million online course enrollments in higher education
  - 73% of institutions had increased demand for existing online courses
    - Growth from economy and H1N1 flu outbreak
  - Use of online education was strong for H1N1 contingency plans
    - 20% of schools not offering online classes were introducing online courses as part of H1N1 (academic continuity) contingency plans
  - 74% of public higher education institutions view online education as critical for long-term strategy

National Survey for Student Engagement (NSSE 2008)

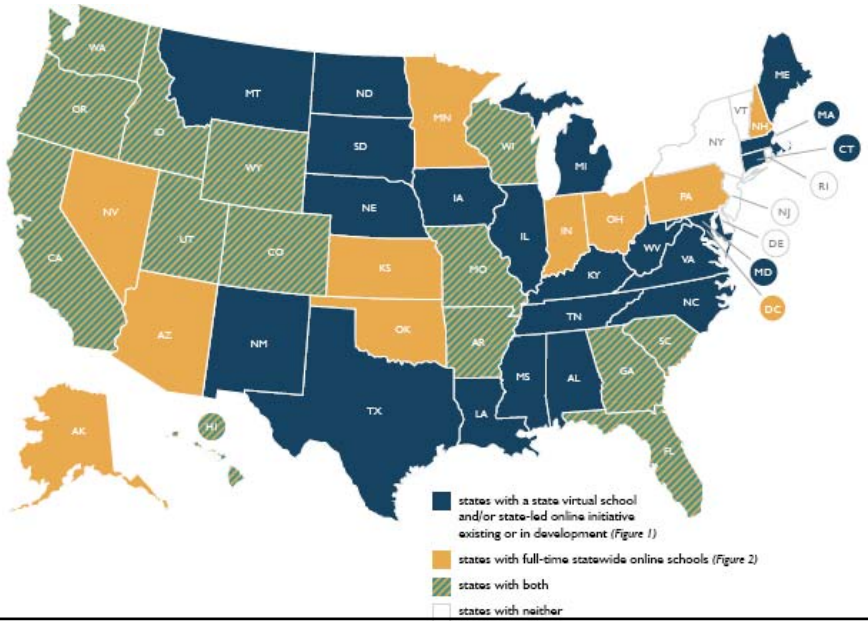
- Online learners reported deeper approaches to learning than classroom-based learners.
- "Those who teach classes online may be making special efforts to engage their students." - Alexander McCormick, NSSE Director
- "People who teach online classes don't take engagement for granted."
- Higher order thinking skills, integrative thinking, reflective learning

Dr. Howard Carlson, Superintendent of Wickenburg Unified School District (AZ):

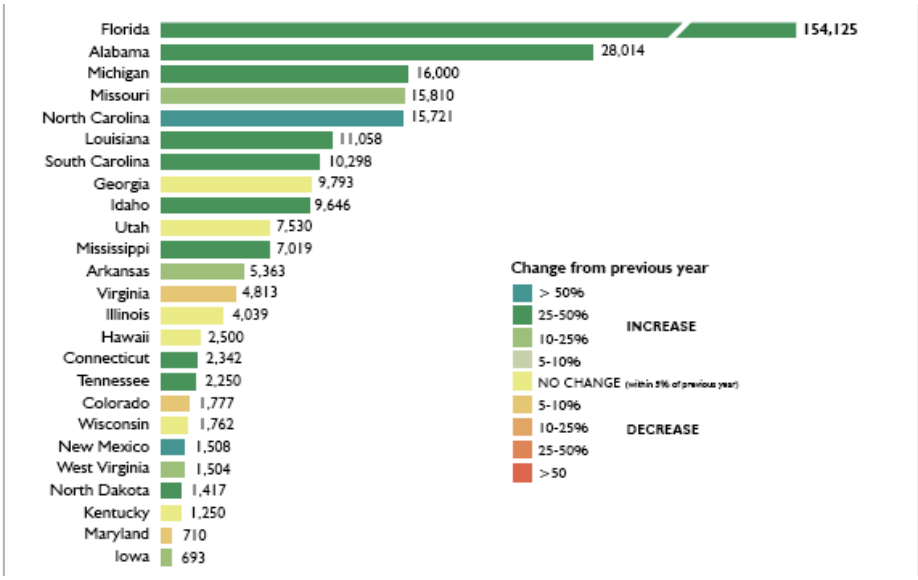
- Online learning is growing at an exponential rate . . .today's students demand greater flexibility, engagement and choice as learners
  - Overcome geographic barriers to learning through technology-oriented education
  - Credit recovery
  - Districts offering full-time and part-time online learning as potential areas of expansion
- Wickenburg USD identified "online education" as one of the strategies for each part of implementing the district's strategic portfolio
  - grades 3-5, 6-8, 9-12
  - improving access to college-level learning and dual-enrollment for high school students
- Solution for district and entire community

National Trends

Summary of key online learning activity



State Virtual Schools: Size and Growth 08-09



K-12 Online Learning is Growing

- 75 % of school districts had one or more students in a fully-online or blended course
- K-12 Online Learning enrollments growing 30% annually nationwide
  - 2000: 50,000 enrollments in K-12 online courses
  - 2003: 328,000 enrollments in K-12 online courses
  - 2005: 500,000 enrollments in K-12 online courses
  - 2007: 700,000 enrollments in K-12 online courses
  - 2008: 1,030,000 enrollments in K-12 online courses

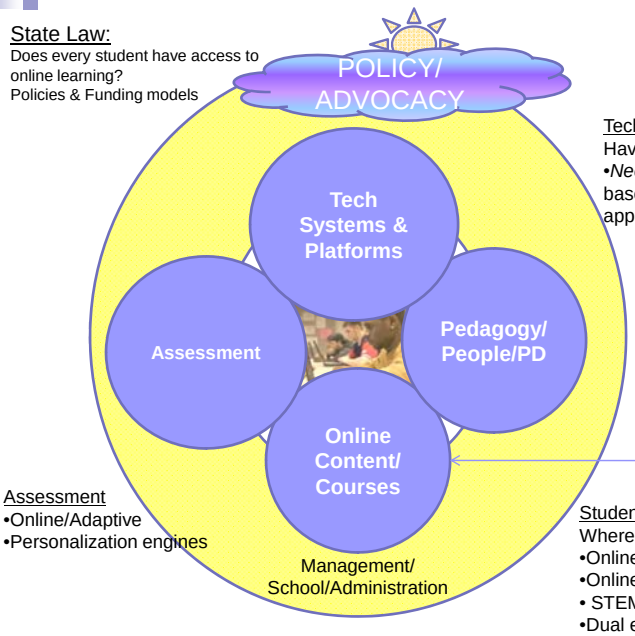
New Solutions through Online Learning

- 75% of districts use online learning to offer Advanced Placement or college-level courses.
- 40% of public school districts in America today say they need online learning resources because certified teachers are not available for traditional face-to-face instruction.
- 60% of schools and districts say they need online learning for credit recovery.
- More than 50% need online learning to reduce student scheduling conflicts to graduate on time.

Project Tomorrow Survey (2009)

- Benefits of taking a class online?
  - According to students:
    - 51% said it allows them to work at their own pace
    - 49% to earn college credit
    - 44% said it allows them to take a class not offered on campus
    - 35% said it was to get extra help
    - 19% said they took online courses to get more attention from teachers

TPAC for Online Learning



State Law:
Does every student have access to online learning?
Policies & Funding models

Technology Platforms
Have existing LMS/CMS: course-based
•*Need* new SIS models for standards-based and new competency-based approaches

Teacher & Administrator PD
Teachers: Need new online teaching skills
Administrators: Need new skills managing online programs

Assessment
•Online/Adaptive
•Personalization engines

Student Support Services:
Where can students access online courses?
•Online tutoring
•Online credit recovery, core
• STEM, Foreign Language
•Dual enrollment, AP, IB

Online Learning Research

- #1 Online Learning Expands Options
  - "The first impetus to the growth of K-12 distance education was an interest in expanding educational options and providing equal opportunities for all learners." (NCREL 2005)
- #2 Online Learning Is Rapidly Growing
  - "Recent Surveys show that K-12 online learning is a rapidly growing phenomenon."
    - Growing 30% annually
- #3 Is Effective: "Better"
  - U.S. Department of Education Report of Online Learning Better than Face-to-Face (USED 2009)

Online Learning Research Highlights

- U.S. Department of Education study of Online Learning, "Evaluation of Evidence-based Practice in Online Learning: A Meta-Analysis and Review of Online Learning Studies" (2009)
  - "Overall, the meta-analysis found that students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction."
  - "instruction combining online learning with face-to-face elements had a larger advantage . . .students the participated in online learning and who spent more time on task benefited the most."

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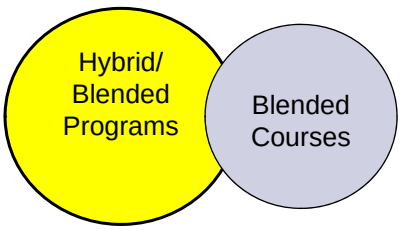
Next Generation Models of Online and Blended Learning

•Buffet: F2F & Online Courses
•Emporium: F2F place with blended/hybrid approaches to learning



•Online course and/or
•Online content
•Online instruction
•LMS/Technology

Online and Blended Course Definitions
Allen & Seaman, 2007

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course with no online technology used — content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. Uses a course management system (CMS) or web pages to post the syllabus and assignments, for example.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Blended Learning: The Convergence of Online and Face-to-Face…the "Best of Both Worlds"

"Blended learning should be approached as not only a temporal construct, but rather as a fundamental redesign of the instructional model with the following characteristics:

-A shift from lecture- to student-centered instruction where students become interactive learners (this shift should apply to entire course, including face-to-face sessions);

-Increases in interaction between student-instructor, student-student, student-content, and student-outside resources; and

-Integrated formative and summative assessment mechanisms for student and instructor." - Educause, *Blended Learning* (2004)

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Blended/Hybrid Learning

- "Combining face-to-face with fully online components optimizes both environments in ways impossible in other formats" - Educause Research Bulletin, 2004
  - Digital content/curriculum, LMS, online assessments, data system, AI, simulations
  - Shift in instructional model and PD/training

Struggling student, low-engagement,
(More direct student support needed)

Self-direction, high engagement,
(Less direct student support needed)

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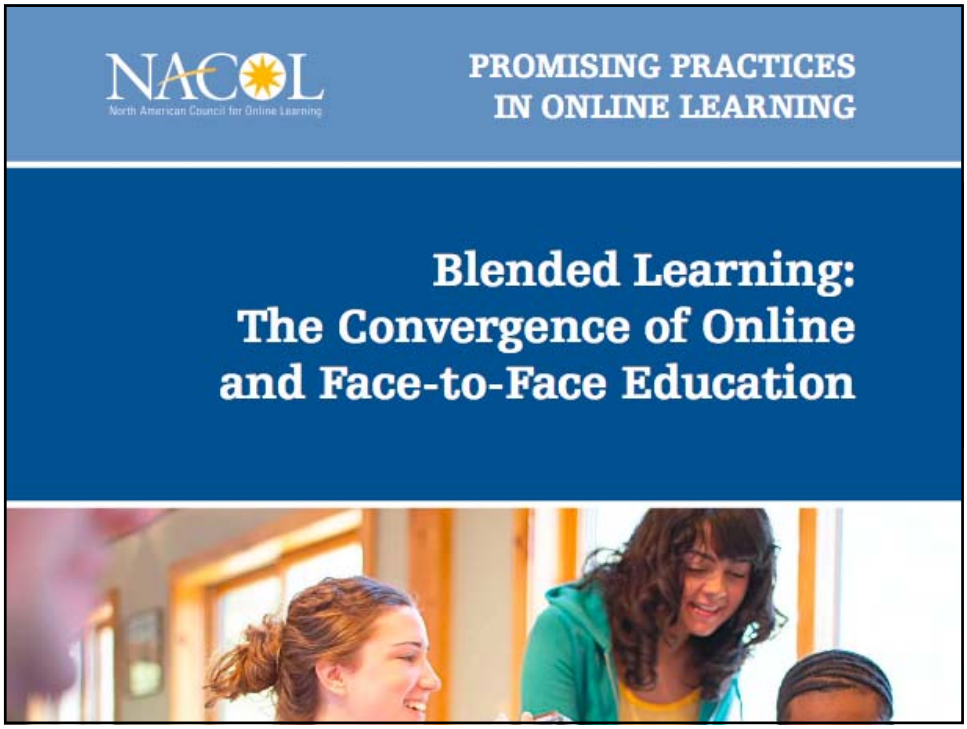

Blended Learning: The Convergence of Online and Face-to-Face

- There is no single type of blended education; student-centered learning
- Policies: competency-based, multiple pathways
- New methods: content, assessment, collaborative development, PD, instruction/pedagogy
- New Platforms: Competency-based SIS; Web-based platform; LMS
- New Solutions: Continuity of Learning H1N1

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Table 1: Key enablers for effective E-Learning Infrastructure and Support

Enabler	***Capability Rating (Low, Average, High)***
Support for dynamic content and resource management	*Content management system*
Collaborative tools for groupware management	*Online communities of learners; Web-conferencing; discussion boards; 2L/Virtual Worlds; asynchronous/synchronous tools*
Intelligent indexing/match-making for resources and contents	*Playlists; tools for intervention; recommendation engines; adaptive assessments*
Standards for security and trust	*Not open to general public*
On-Demand Quality of Service	*Technical ability to handle varying internet loads*
Knowledge Management	*Integration with powerful SIS and relational database tools*
Seamless sharing of large pool of resources (information, storage, customized software/hardware and computational power)	*Software/CBT; customized tools; All constituents can access critical information*
Support for a dynamic and continuously evolving set of participants	*Registration system; mobility; rolling enrollment?*

Abbas, Umer, Odeh, McClatchey, Ali, Ahmed (authors) of paper, A Semantic Grid-based E-Learning Framework (SELF); Pakistan/U.K. Retrieved March 17, 2010 online: http://arxiv.org/ftp/cs/papers/0502/0502051.pdf.

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New Reports

- February 2010 -- Governor Bob Wise, Alliance for Excellent Education
  - *Online Learning Imperative: Solution to the 3 Looming Crises in Education*
    - *Global competitiveness*
    - *Teacher shortages*
    - *Economic downturn*
  - Governor Wise: "If you think about how much the world around us has changed just in the last twenty years, it becomes clear that the education sector is like a massive mainframe computer trying to fit itself into a smartphone world."

21st Century Instructional Materials Should...

- Be closely aligned with state standards for what students should know and be able to do and with the state accountability system.
- Allow for flexible use and control over content by users to meet a range of instructional approaches and modalities and the individualized needs of all students, including access by students with disabilities.
- Be accessible "on demand" at the time and place of learning in and out of school.

21st Century Instructional Materials Should...

- Be cost-effective and represent good value for the investment of public dollars.
- Be able to be supported by or grow from voluntary, collaborative inter-state efforts.
- Engage learners through multimedia (in print, online, audio, video) and interaction and simulation.

21st Century Instructional Materials Should...

- Be vetted by subject matter experts and educators to ensure academic quality.
- Be updated frequently to reflect new developments in the content areas and consistent with the development of new standards and assessments.
- Potential cross-sector collaboration opportunities, including between K-12 and postsecondary education.

- *Instructional Materials: Rethinking the State Role in Instructional Materials Selection: Opportunities for Innovation and Cost Savings* by NASBE (2009)

"The age of true personalization is now upon us."

Questions?

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Resources

- K-12 Online Learning Reports
  - NACOL National Primer on K-12 Online Learning
  - John Watson, Evergreen Consulting - Keeping Pace with K-12 Online Learning
  - Augenblick, Palaich & Associates - Costs and Funding of Virtual Schools
  - iNACOL Promising Practices Series
    - Blended Learning
    - Credit Recovery Socialization
  - iNACOL Research Reports:
    - Access and Equity in K-12 Online Learning
    - Professional Development for Virtual Schools
  - 21st Century Skills and Virtual Schools
- Identifying Needs of States for Online Courses and Services
  - NACOL Needs Assessments
- Professional Development
  - conference: **Virtual School Symposium (Phoenix, November 2010)**
  - Monthly Webinars
- National Quality Standards for K-12 Online Learning
  - iNACOL National Standards of Quality for Online Courses
  - iNACOL National Quality Standards for Online Teaching

Thank you!

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Request for Presentation Proposals opens April 2010

www.virtualschoolsymposium.org
www.inacol.org