Education Transformation through Connected Learning

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21st Century Pedagogy: How Learners Best Engage

Knowledge Acquisition > Knowledge Deepening > Knowledge Creation

Source: Team Analysis and Robert B. Kozma
Real Life Vs Virtual Life
Statistics and Trends

- **Web 2.0 in the US**
  
  85 percent of U.S. college students use Facebook.
  One in four Americans have a MySpace account.
  94 percent of U.S. teenagers send emails over the Internet; nearly three out of four teenagers use social networking sites and go universites online at least once a day.
  At least 136 U.S. have an education channel on YouTube. One in every three videos viewed in the United States in January 2008 was a YouTube video.
More Statistics and Trends

Mobility

682,500 Wi-Fi phones were sold worldwide in 2007, up more than 60 percent from 2006.

Many professors use mobile devices to notify students of class updates, conduct quick quizzes or polls, and submit data while doing classroom field work.

Collaboration

The National LambdaRail enables more than 300 higher-education institutions and 227 medical schools and hospitals to conduct virtual meetings via TelePresence.

WebEx is used extensively to conduct classes at many U.S. universities, including Princeton and Emory.

Source: Cisco, 2008
The Power of Us

“We participate therefore we are”

Transforms our capabilities for learning

Social Learning

How does that become operational in an education setting

“Shifts the focus of our attention from the content of a subject to the learning activities and human interactions around which content is situated”.
We Believe the Education Game Is Changing

Facing Large Scale Disruption

The Learner
Lives an Online Life
Attends a Disconnected Classroom

Education System
In Need of a Bold and Urgent Response

The Employer
Demands New 21st Century Skills
Demands Strong Basics
Employers are Adapting to the Challenges of Global Competition

“The best employers the world over will be looking for the most creative, most innovative people on the face of the earth.”

Tough Choices for Tough Times, 2007

Results refer to US 2-year college and technical diploma graduates, but are similar for high school and 4-year college diploma graduates.

Education 3.0—a Paradigm Shift

Education 1.0
- Traditional Education Systems

Education 2.0
- Curriculum
- Teachers
- Accountability
- Leadership

21st Century Learning
- Supported Through an Adapted Reform Agenda

21st Century Skills

21st Century Pedagogy

Achieved in Holistic Transformation

Enabled by Technology
**Education 3.0 Change Model**

**Holistic System Transformation**

**21C Learning Vision**
- Engaged student centric
- Immersive collaborative environment
- Digital collaborative practices

**21C Pedagogy**
- Collaboration ready networks (V, V, D)
- Digital learning environment

**Reform**
- Collaborative accountability
- 21C Curriculum
- Teacher quality focus
- Model leadership

**Technology**
- 21C Skills
- STEM+
- Creativity and Collaboration

**Enablers**
- Collaborative Prof Development
  - Weekly dedicated time
  - Model transformed pedagogy
- Communities of practice
- 100% Baseline Connectivity
- Deploy Synchronize installations with professional development
21st Century Pedagogy: How Learners Best Engage

Knowledge Acquisition > Knowledge Deepening > Knowledge Creation

Source: Team Analysis and Robert B. Kozma
Creativity and Collaboration Are the Foundations of 21st Century Learning and a 21st Century Economy

Innovative Economies

A More Innovative Workforce with 21st Century Skills

Deep Expertise
Creativity
Interdisciplinary Focus
Team-Based Problem Solving

Leading to…
21st Century Skills: What Learners Need to Know

1. Develop Core Subjects to Create Deep Specialized Subject Knowledge
2. Place Special Emphasis on Science, Technology, Engineering, Math (STEM) Disciplines
3. Ensure Most Able Students Can Reach Higher Achievements in 21st Century and STEM Skills

Source: Developing a Framework for 21st Century Learning, Partnership for 21st Century Skills, April 21, 2007; team analysis
21st Century Technology: The Accelerant of System Change

Automation
Phase 1

Organization
Phase 2

Collaboration
Phase 3

“My school is more efficient.”

“I can view critical and whole system information.”

“I can support transformational teaching and learning.”
Paradigm Shift to 21st Century Learning...Right for Every System

Why Everyone?
- Global Competition
- Innovation: The Critical Driver of Productivity
- Talent Is Now a Global Market

What's Globally Consistent?
- Creativity and Collaboration Skills
- Leadership to Drive Change
- Technology as an Accelerant

What's Locally Tailored?
- National/Regional Competitiveness
- Basic Capacity Gaps
- How to Sequence Your Path to 21st Century Learning
Presents a Transformational Challenge to Leaders

<table>
<thead>
<tr>
<th>From: High Performing System (Ed 2.0)</th>
<th>To: Connected Learning (Ed 3.0)</th>
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<tbody>
<tr>
<td><strong>Curriculum</strong></td>
<td><strong>Excellence in ‘Core Subjects’</strong></td>
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<td><strong>Assessment</strong></td>
<td><strong>Assessment of Traditional Skills in Traditional Ways</strong></td>
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<tr>
<td><strong>Pedagogy</strong></td>
<td><strong>Teacher Imparted Knowledge ‘Acquisition’</strong></td>
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<td><strong>Technology</strong></td>
<td><strong>Automated Processes, Devices, and Connectivity</strong></td>
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<td><strong>Professional Development</strong></td>
<td><strong>Traditional and Formal Approach to Qualifications and Training</strong></td>
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<td><strong>Learner-Centric Knowledge ‘Acquisition’, ‘Deepening’, and ‘Creation’</strong></td>
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<td><strong>New Assessment Framework for 21st Century Skills</strong></td>
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<td><strong>Enabler of Better Teaching and Learning</strong></td>
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<td><strong>Ongoing Collaborative Learning in Teacher Communities</strong></td>
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*Refers to the thinking of Robert Kozma*
Cisco Connected Learning
What is Connected Learning?

- Connected Learning is Cisco’s vision for how technology helps education institutions build the right infrastructure to transform education, enhance administrative efficiency and achieve academic excellence.
Characteristics of Connected Learning

- Creates environments similar to the outside world
- Streamlines and automates information flow and processes
- Enables effective communication within the campus, out to the home & the community
- Offers learning opportunities for both students and teachers 24/7
- Embeds technology across every aspect of the organization
5 Steps to Transformation

1. Create a compelling vision of 21st century learning
2. Connect all Buildings & Secured Environment
3. Develop Student & Teacher Proficiency & Enhance Proficiency
4. Create Student Learning Environments
5. Build Learning Community

Learning Effectiveness

Vision

Connected
Buildings

Environment

Proficiency

Community
Step 1

Create a Compelling Vision
Understanding Your Institution’s Needs and Gaining Consensus

- Educational Goals
- Mission
- Departments:
  - Curriculum & Assessment
  - Technology
  - Professional Development
  - Human Resources
  - Facilities
  - Transportation
- Funding
- Support from Board and Community
Benefits of Building the Vision

- Develops inter-departmental, administration and community consensus
- Establishes strong partnership with staff, students, parents and community
- Articulates long term plan that addresses: Support, scalability and sustainability
- Differentiates your institution from other
- Creates new support opportunities for institution as “hub” and economic driver in the community
Step 2

Connect All Buildings
Connect All Buildings

Data
Voice
Video Streaming
Video Conferencing
PA (Intercom)
Video Monitoring
Building Controls
Clocks and Bells

IP Network
Benefits of Connecting the Schools

- Provide wired and wireless secure access to important data by authorized users anytime, anywhere
- Reduced number of wiring runs, management systems and expert resources
- Elimination of or reduction in operating costs
- Flexibility for your network to evolve as student population expands or declines
- Ability to offer new enhanced services
Step 3

Develop Staff and Teacher Proficiency
Empower Teachers with Technology

- Applications
  - Curriculum portal/software
  - Grade books
  - Student Information Systems

- Devices
  - Interactive white boards
  - PDAs
  - Touch screens
  - Laptops and/or tablet PCs
  - IP phones with communication applications
  - Projectors
  - Video conferencing/on demand

- Robust professional development
Benefits of Empowering Teachers

- Allows teachers to master technologies first, and then assimilate them into the classroom
- Integrated systems and curriculum, offer 24-hour access to data, opportunity for collaboration and best practice sharing
- Automates time consuming processes for more time with students
- Provides tools for teachers to create engaging learning environments
Step 4

Create Student Learning Environments
Student Centered Productivity

- 21st Century Skills
- Fluent users of Word Processing, Excel, PPT, Digital Integration
- Internet based Research
- Collaboration
- Anywhere, Anytime, Anyway Learning
Expanding the Classroom

- Video Conferencing
- Video on Demand Courses
- Video Streaming
- Digital Production
- Podcasting
- Data and Voice Conferencing
Expanding the Resources

- Centralized Resources: “Digital MarketPlace” Model
  - Amazon + ITunes
  - Smaller, Relational Portions of Specific Content
  - Media Rich
  - Rating and Ranking
  - Curriculum Builder
  - LMS Integration

- Publisher/Content – Direct Correlation to National/State Standards and Testing
Step 5

Build Learning Community
Create 21st Century Learning Environments

- Live or on-demand
- Distance learning programs
- Simulations and virtual environments
- Collaboration and content creation
- Video/Rich Media
- Assessment and prescriptive learning
Extend to the Home

- On-Line Services
  - Access to Curricular Material
  - Access to Homework Files
  - Access to Attendance and Grades
  - Access to School/Home Financial Info
    - Bus Passes
    - Text books, Library Books
    - Fees & payment
  - Directories and Email
  - Access to meetings, conference calls
  - Collaborative Community Input
The Benefits

- Creates individualized education model for both students and teachers
- Expands breadth and depth of curriculum and professional development offerings
- Enables effective learning at any hour of the day or night, from anyplace, on or off school grounds
- Promotes lifelong learning
### Summary: Five Steps To Transformation

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Create a compelling vision of 21st century learning</th>
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<tr>
<td>Step 2</td>
<td>Connect all buildings and provide secure internal &amp; external access to critical information</td>
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<td>Step 3</td>
<td>Develop staff &amp; teacher proficiency and enhance productivity</td>
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<td>Step 4</td>
<td>Create student learning environments for network-based instruction and technology based opportunity</td>
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<td>Step 5</td>
<td>Build a Community for student-centered learning and collaboration</td>
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Develop the Education Human Network

Human Network across the Education Community

- Follow Me Content - content follows the users, processes, and activities
- People subscribe to people - social connections and expert location
- Immersive Interactions – presence, geospatial location, semantics/context

Students
Educators
Administrators
Parents/Guardians
Agencies
Partners

Governments
Businesses
Storage
Researchers
IT providers
Suppliers

Learning Services
Learning Analysis
Visibility & Awareness

Expert & Social Collaboration
Resources Management
Cross-ecosystem planning & modelling

Value Creation
- Student Experience & Satisfaction
- Recognised Quality Education
- Financial Economics
- Operational Efficiencies
- Education Lifecycle Management
- Environmental Economics

Source: Cisco IBSG