Transforming Education, Transforming Lives:
A Path Toward Next Generation Teaching and Learning

Executive Summary

Education is at the heart of human progress: educating students, driving innovation, and promoting social equity. The very best educational systems prepare people to be successful, productive, and engaged members of society. These systems provide appropriate knowledge, skills, and experiences, enabling students to obtain jobs that promote social equity and economic growth.

Today, education is undergoing change at an unprecedented rate. To prepare students to succeed in the global economy, they need new skills, taught in new ways. Teachers need to develop new material and deliver it differently. Parents expect greater involvement, and administrators need to constantly improve administration and management efficiencies.

Cisco can help educators overcome these challenges. Our solutions drive cost savings, expand access to quality education, support learning transformation, improve student engagement, prepare the future workforce, and place schools, colleges, and universities at the heart of smart and connected communities.

Education for Innovation

Students and their parents know that they can no longer expect a job for life. Globalization and technological change mean that tomorrow's workforce needs to have new skills, and be prepared to learn throughout life. This means learning in new ways: solving real problems, using multiple disciplines, and drawing on the very best content that the world has to offer. Countries that fail to invest in education and their students (or invest in the wrong areas) will be left behind, as jobs and the prosperous communities that go with them transfer rapidly across the globe.

Education is a complex process. It demands the very best from parents, teachers, students, and administrators. But all can benefit from building on the right foundations. A fast, secure, reliable, and integrated network provides that platform. Collaboration tools and advanced video support embedded into the network can transform learning. Teachers can work together to develop new material and learn from each other. Students no longer face the choice of either working flexibly at home or in school in teams: they can do both. All can benefit from virtual experiences, places, and events never before possible.

> The purpose of education is to prepare people to be successful, productive, and engaged members of society, and in so doing, shape sustainable societies, enhance economies, and improve lives.

Technology plays a critical role in this innovation. When technology is implemented and integrated appropriately, students have an opportunity to learn about that technology by using it as a part of their learning. For example, students might build an online portfolio, develop a spreadsheet to track the results of a science program, and do Internet searches on specific research topics. Using technology also helps to improve efficiency. Online attendance, mass notification systems, and streaming video applications all make it easier to administer the business of education and the art and science of learning. Finally, technology helps to improve equity. Students from across the globe can use technology to interact with resources and information, outside experts, and one another, regardless of physical location or demographic status.

Challenges to Education Leaders

Every country must prepare students to become active and productive citizens; however, different countries face different challenges in achieving this goal. And some countries face a range of challenges within their own borders.

Figure 1: The performance of traditional teaching vs. online or blended delivery. Until now, the experience of technology has lagged behind traditional face-to-face education. With advances in video, collaboration and mobility, blended learning experiences are set to surpass traditional ones.

In countries such as India, there are not enough schools or teachers to deliver education to all children. This challenge mirrors those faced in rural areas of the United States or Europe, where vast distances prevent the best teachers from being everywhere at once. In emerging countries, such as Brazil and Russia, challenges of accountability, cost, and quality instruction are daunting. While they have the schools, they are lacking in these areas. Developed nations, such as the United States, Canada, and the United Kingdom, have largely addressed the issues of performance metrics, capabilities, and workforce provision, but they are not doing these well enough, and they are still not effectively able to prepare students with skills required to succeed in 21st century careers–which may change many times over a lifetime.

Students and their parents know that they can no longer expect a job for life. Globalization and technological change mean that tomorrow's workforce needs to have new skills, and be prepared to learn throughout life.

Regardless of the geographic location, Cisco can help with a range of global solutions that meet the most pressing imperatives of educational leaders worldwide.
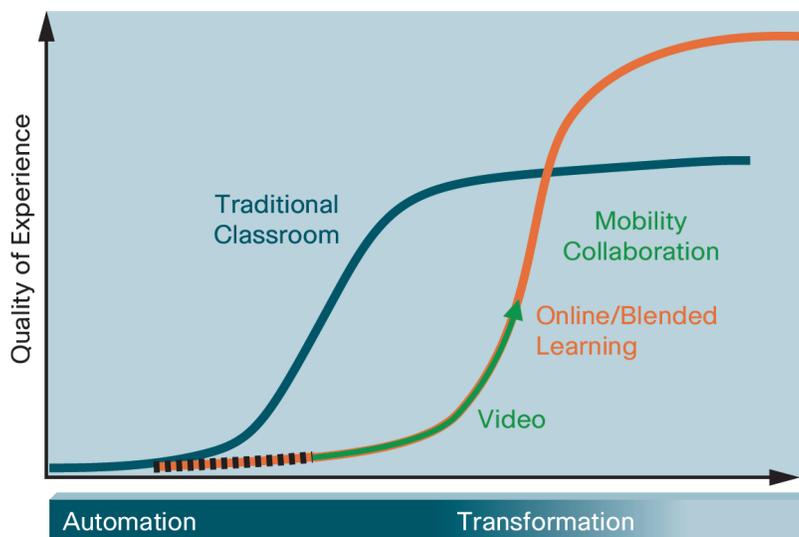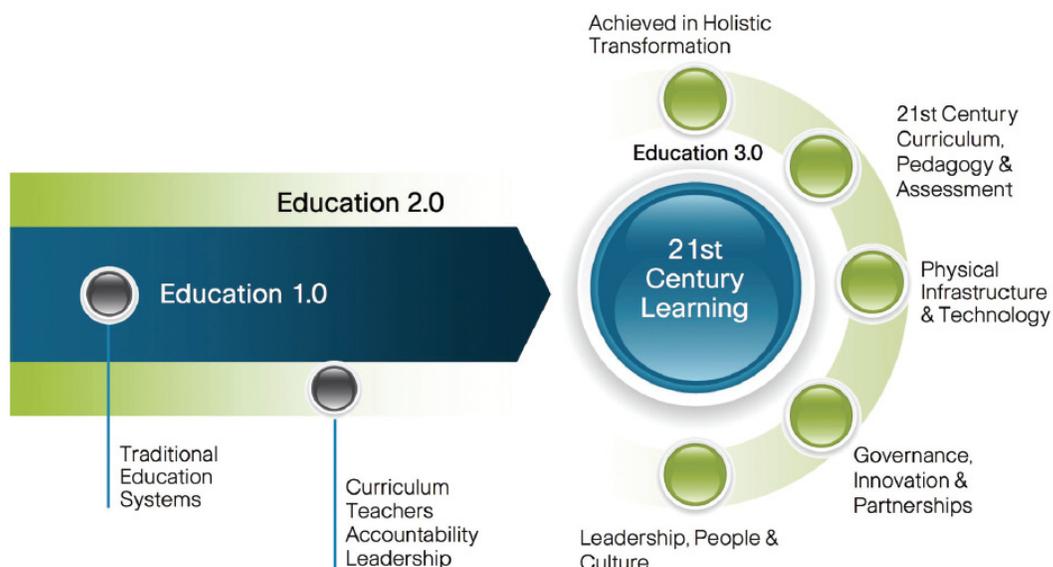
Fully arriving at Education 3.0 requires collaboration. Collaboration as a form of virtual communications is a cornerstone of educational transformation: faculty members collaborating with each other, with students, and with outside experts, and collaboration between students within their schools and campuses and across traditional educational boundaries.

Figure 2: Education 3.0 − A Paradigm Shift

Education Systems to Education 3.0

Closing the global education gap requires us to think about education in a new way. We call this Education 3.0. It takes a holistic approach, learning from the failure of piece-meal approaches in the past. 21st skills cannot be implemented alone, but only in lockstep with new pedagogy and assessment. This—the core of Education 3.0—is supported by new systems that take an integrated approach to technology, governance, and leadership.

In the classroom, Education 3.0 means a rich, collaborative learning experience focused around authentic, project-based learning. Students and teachers should have access to materials, formative assessments and each other "anytime and anywhere," and be able to draw in experts from around their system or around the world at the touch of a button.

Today, Cisco is working with some of the world's most innovative school systems to make Education 3.0 a reality, bringing advanced student learning and teacher professional development together with the efficiency benefits of a next-generation network.

Education with a Purpose

Cisco understands the purpose and the mission of education and uses innovative technology to connect communities and people, thereby helping people improve their lives. We call this the Human Network. When technology meets humanity on the human network, the way we work changes and the way we live changes.

This impact, this cross-communication, enhances cultural sensitivity and helps us better understand differences in views, perceptions, and potentially solutions. This is the Human Network Effect. A company that helped build the Internet, Cisco has delivered networks and networked services that help businesses, governments, educational and healthcare institutions, and individuals connect with information and each other in new and innovative ways. The Human Network links the world's regions, transforming communities, businesses, and lives everywhere.

> We believe the same principles of openness that made the Internet a thriving ecosystem for the past 20 years can be applied to help schools, colleges, and universities thrive as well.

Cisco is creating the Human Network. Today, Cisco touches approximately 67 percent of the world's population, or 4.6 billion people. Our public-private partnerships have made significant, positive strides in education, socioeconomic development, and crisis relief. We offer experience, technology, people, and reach to help public sector leaders use the power of the network to address the very real challenges faced by educators today.

Connected Learning Environments

Cisco helps schools, colleges, and universities shift their focus toward Education 3.0 by delivering Connected Learning environments that support robust collaboration, relevant learning experiences and learning that takes place beyond the walls of the traditional school or campus.

Educational institutions increasingly report the need for problem-based learning. Today's complex and multidisciplinary issues can be used to place students at the center of problems such as climate change, the genetic basis of disease and other problems. Students need math, science, ethics, and history to solve problems, and they need to be connected with a larger community of learners.

Cisco Connected Learning environments include solutions for improved administration and management, enhanced safety and security, and effective next-generation teaching and learning. They support educational experiences that:

· Aim at solving real-world problems

· Provide learning in physical or virtual groups and teams as opposed to sitting in a traditional lecture-based classroom, providing students with a key 21st-century skill that will help them be effective and thrive in the workplace

· Support learning experiences that can occur almost anywhere and at any time

· Capable of sustaining learning journeys that support lifelong learning, as people change jobs and careers multiple times in their lives, thriving on technology changes and new skill sets required for job changes

Cisco Solutions for Teaching and Learning

Cisco TelePresence: Creates an immersive experience that is as real as a live, in person, face-to-face interaction. This level of capability empowers students and teachers to collaborate real-time with individuals from different educational institutions and communities, via the National LambdaRail (NLR) owned and operated, national TelePresence Exchange for research and education. It includes the interconnection to commercial carriers for industry-to-academia TelePresence sessions. It is the largest research and education network that is end-to-end Cisco, at all network layers. There are now more than 225 Cisco TelePresence systems throughout academia, connected across 14 countries.

Cisco TelePresence Synch: Brings video to the heart of the classroom by effectively converting a standard interactive whiteboard into a powerful multifunction collaboration tool that brings together "live" remote experts and classrooms. It provides teachers, students, and administrators the power to connect with each other, creating blended learning and professional development experiences across live video.

Cisco WebEx: Online collaboration tools that let educators interact with students more efficiently and reduce costs. Cisco WebEx solutions provide flexible instruction with extended reach online. Interactive features include real-time testing and grading, instant feedback, assessment tracking, breakout sessions, and hands-on labs to deliver a variety of dynamic e-learning opportunities. Train instructors and staff across geographical boundaries and provide shared workspaces using WebEx applications specialized to meet the needs of education institutions.

Digital Media Suite: A comprehensive offering of social video, digital signage, and IPTV systems, this solution can help transform how students and teachers learn, grow, communicate, and collaborate.

Unified Communications/Collaboration: A powerful, IP-based communications system that uses your existing data network to provide new, advanced communication services such as voice, video, and web collaboration. Improves communications and collaboration by helping students, faculty, staff, and parents connect and collaborate in real-time. IP-based communication services also help improve campus-wide or district-wide communications, safety, and productivity, all while offering significant cost savings.

Cisco Lecture Vision: An integrated solution to make it easier for education institutions to capture, transform, and share video. Cisco defines a new approach to video content that helps educators improve every phase of the end-to-end video creation, distribution, and consumption process.

MXE: Allows for the effective capture and dissemination of rich media information across multiple input and output formats—perfect for schools where endpoints are diverse and investments need to be made for the long term.

Show and Share: A webcasting and video sharing solution that allows for simple archival and retrieval of stored video assets throughout a school system or campus.

Cisco Cius: An innovative, ultra-portable, mobile collaboration tablet for schools, colleges and universities that offers access to essential education applications and technologies. This powerful productivity tool for instructors and administrators is a safe and secure network device for video conferencing, mobility, and highly secure access to cloud-based education applications.

Summary

Today's economic and social realities require changes to the ways education is delivered, and today's educators must be able to use technology to facilitate learning and help students excel. Cisco Connected Learning solutions are helping many schools and other educational institutions meet this objective by using the network as a platform for next-generation communication, collaboration, and service delivery. For more information about education solutions, visit www.cisco.com/go/education.

Cisco Global Education actively engages learners, educators and policy makers from around the world to achieve high quality education in the 21st century. Through our global programs, thought leadership and country education engagements we make sure education transformation moves from vision to reality through the power of technology and multi stakeholder collaboration.
To learn more visit www.transformglobaleducation.org