



The Future of School

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Cisco Internet Business Solutions Group (IBSG)

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Defining the Educational Model

New insights about effective learning, along with increasing demands for 21st century skills, are fueling a growing desire for holistic transformation of education systems. Around the world, the need for a solid foundation on which quality education and system leadership can be achieved is inescapable.¹

Education has three interdependent aspirations:

- To fulfill individual potential
- To contribute to strong, inclusive, and active communities
- To develop skills that enable individuals to find work that matches their potential, allow organizations to identify people with the capabilities needed to grow and compete, and enable the economy to remain strong and resilient

The performance of individual schools remains central to those outcomes. But the larger context of educational reform also is changing.

In this paper, the Cisco Internet Business Solutions Group (IBSG) describes a vision of “the future of school” in a period of dramatic change, enabled and often accelerated by powerful new tools of communication and collaboration.

Key dimensions of wider education system reform include attracting and developing high-quality teachers; developing holistic curricula and associated assessment frameworks that test the ability to meet the requirements of a global, modern society and a robust economy; and creating practices and regimes that improve processes and outcomes while developing high-quality system leadership. A growing emphasis on public accountability for results and performance—across education systems and within individual schools—is an integral part of extensive, and sometimes contentious, change.

Our own experience, as well as a growing body of research, tells us that learner expectations are changing, bringing new habits of learning from their world of communication and collaboration—powered, in part, by emerging networks of social interaction. Employers, eager to prosper in an innovation economy, require new skills from workers, and increasingly value people who, in addition to possessing core literacy and numeracy skills, can add creativity, collaboration, problem solving, and decision making to their portfolios. Independent, life-long learning is fast becoming a prerequisite for effective skills development.²

1. Brief overview draws on a new white paper, “Equipping Every Learner for the 21st Century,” May 2008, by Cisco’s Global Education Program.

2. www.21stcenturyskills.org

A Vision of the Future of School

Within this context of sweeping and rapid reform, what can we expect to see within schools as they adapt? What is the vision for the future of school, and how is it confronting the dramatic opportunities and considerable risks from this period of unprecedented change?

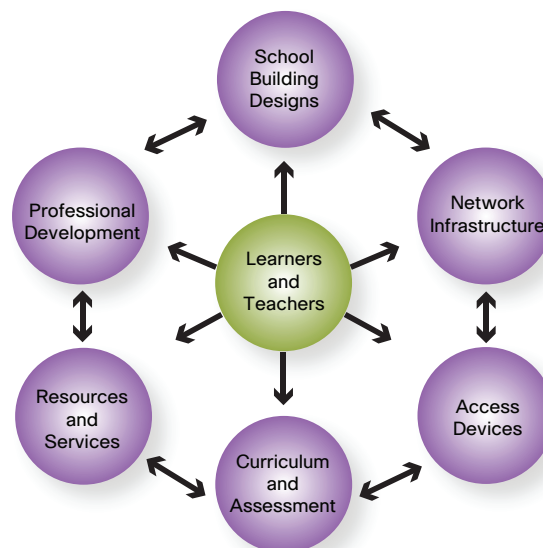
At their heart, schools are engaging in a new pedagogy, giving learners more responsibility for their learning, personalizing learning opportunities, and helping teachers draw from a larger repertoire of strategies and skills to lead interdisciplinary and project work. As always, the best learning is authentic, engaging students in practical and relevant contexts that demonstrate the value and validity of the skills and knowledge they gain.

Cisco's vision of a future education system is grounded in an educational model that articulates clear objectives to prepare students for life, learning, and work. That vision should be articulated and developed before decisions are made about the components that will support this model and ensure learner success.

Figure 1 shows the education model, in which learners and teachers are the focal point that aligns with the following set of interdependent components:

- building and learning environment design
- curriculum and assessment systems
- professional development of teachers and school leaders
- resources and related services, including school management and administration
- network infrastructure
- technology access devices

Figure 1. Education Model Components



Source: Cisco IBSG, 2008

None of these components is able to unlock the full value of its distinct contribution to improving school performance and increasing relevance to the 21st century without interacting with the others. To be effective, the components of the education model in Figure 1 should be linked in a holistic approach. This implies that:

- Schools are no longer designed and built as education factories, reflecting architectural specifications derived from ideas about organizing the labor force for mass production in the 19th century. Schools increasingly create an attractive and relevant learning environment, with more flexible spaces supporting all that we know about collaborative, self-directed learning. These schools actively encourage engagement of families and the wider community, both local and virtual.
- The curriculum is relevant and up to date. Assessment structures not only measure recall but reflect mastery of 21st century skills and knowledge needed for the social and cultural context and for work.
- Professional development helps teachers meet the demands of a new educational model, and gives confidence in using technology and other tools to improve the quality of teaching and the approach to students' learning.
- Resources for teaching and learning are available in formats that can be customized for every learner based on aptitudes, cultures, and learning preferences. Administrative processes and services for efficiency, transparency, and improved productivity are implemented.
- Infrastructure—buildings, technology, security systems—provides a welcoming, stimulating, safe, and secure environment conducive to learning.
- The devices that students and teachers use will be varied and will fit specific needs. These devices will include handhelds, laptops, desktops, large screens, and interactive whiteboards, as well as telephony and videoconferencing facilities.

Leadership development and change management strategies also should be in place so school principals and administrators can build and share a vision that meets the demands of society and, in turn, provide a supportive environment in which both teachers and learners flourish.

Relevant Curriculum and Technology

This education vision relies on a technology-rich learning environment where access is ubiquitous and learning—whether from home, school, or in the community—is seamless; learners and teachers draw from a pool of Internet devices that suit specific learning needs.

The role technology plays in learners' lives outside of school is understood and capitalized upon—making full use of the “hyper-sociality” that technology engenders and students embrace—by providing for collaborative learning environments within the formal curriculum.

The core curriculum, which has moved away from subject silos and now is based on process skills and new content, provides the basics that everyone needs: teachers and learners are given personal space and time in the school day where they have the freedom to develop their potential; learning to learn is considered an essential skill. Also of great importance is valuing the interests and contributions of every learner. In this way, students become authors of resources in an environment where their collaboration skills are as important as the content they develop. The resources students and teachers create and use are technology-rich, imaginative, and interactive, yet allow both teachers and learners to enrich and customize them further to match their own personal learning and teaching preferences.

Teachers have learned to view their role as one of guiding students in learning how to learn, ensuring that information literacy skills are sufficiently honed so that students can readily access resources that further their interests. Learners then are equipped with the competencies to go beyond the formal curriculum and collaborate across schools and regions, nationally and internationally. In so doing, learners are encouraged to follow their interests when and where their curiosity takes them.

Learning is collaborative. Games are used for teaching, learning, and engaging students in exciting, new ways. Age- or grade-related classrooms are not as important because technology supports every learner's pace and style, with teachers acting as coaches and mentors. Experts from all walks of life connect to classrooms virtually so that the move from formal education to work is seamless, with each student having found his or her niche by the time formal studies are completed.

Learning is highly relevant and authentic, and students learn to take responsibility for their learning naturally. There is a seamless transition between all phases of learning because students have access to an education that matches their abilities and interests. Students monitor their own learning pathways through learning portfolios (or learning passports) that take them from kindergarten to the workplace, via their route of choice, supported by peers, educators, and family.

Mass creativity will thrive in societies with education systems that are curiosity-led, create high levels of self-motivation, and promote collaboration between learners. An inflexible, top down, standardized curriculum may be a good answer to the industrial economy's demand for punctual, literate, diligent workers capable of following rules and procedures. An innovation economy requires more than that.

The Ten Habits of Mass Innovation
Charles Leadbeater
NESTA, Making Innovation Flourish Series
November 2006

Learning as a Continuum

Educators encourage students to see learning as a continuous process that flows easily and without interruption between school and the community. This allows students to select the tools with which they choose to learn, whether they are technology-based (such as Web 2.0 applications, videos, or simulations) or more traditional (books and pens). Teachers orchestrate aspects of each student's learning environment, supporting students in finding the best way to learn, while helping them develop knowledge, skills, and understanding to the best of their abilities.

Curriculum goals become personal learning objectives relevant to both society and the economy, and assessment is continuous, authentic, and timely. The curriculum adequately prepares learners for future learning and their lives beyond school.

Learners are able to continue their education, and are well-prepared for work, willing to continue their learning trajectory amidst a continuous atmosphere of change in which learners are equipped with all the necessary skills. After leaving school, learners can make a valuable contribution to society because they have been prepared with relevant skills. All aspects of their school experience—including extensive use of collaboration and social networking tools—match the needs of the world in which they live.

The education system's network infrastructure supports the "human network," in which people can connect and communicate to facilitate collaboration and accelerate creativity and transformation. All parts of the education system are connected to the same network so that security constraints are removed; learners, teachers, parents, and other stakeholders can share expertise freely within their school, with other schools, and with others outside the formal boundaries of the education system. Students can take courses on any subject that interests them, using tools and capabilities of the "participative" web, more commonly known as Web 2.0.

Where to Next?

There is an immediate need for policymakers—together with educators, community leaders, and employers—to review their current vision for education and question its alignment with the economic and social goals of the jurisdiction. A debate should follow in which each of the components that contributes to a successful education—infrastructure, access devices, professional development, curriculum, assessment, and resources—is deconstructed and rebuilt to align with the vision.

In developing a new model for education, learners should be at the very center of the debate, with consideration given to their current and future needs as 21st century citizens, their learning preferences, and their adeptness with technology. This will require young people to be involved in the discussion.

These deliberations will help shape the education model, form policies and processes that can be implemented to ensure smooth transitions for students throughout school, and further the value of higher education and work. As a result, education systems will do an even better job of producing well-rounded, responsible citizens who are able to rise to the challenges of an increasingly connected world.

Notes

More Information

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps CXOs and public sector leaders transform their organizations—first by designing innovative business processes, and then by integrating advanced technologies into visionary roadmaps that address key CXO concerns.

For further information about IBSG, visit <http://www.cisco.com/go/ibsg>



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