The challenge for education and the creation of great schools in the 21st century is to create an approach that is agile, adaptable and in tune with young people’s lives outside of the classroom and their future employability. The answer lies in innovation, but the question is what kind of innovation, and how should it be implemented?

The solution requires a thoughtful approach to integrating technology to support pedagogical goals. Simply giving each child a computer will typically not produce superior learning without additional changes in the nature of the school’s teaching, learning and assessment practices (Dynarski et al., 2007).

Microsoft Partners in Learning stands on a fundamental belief that the creation of an innovative school requires a holistic approach. To do this, Partners in Learning has developed a 1) Innovation Framework for creating a system change which has been adapted from the work of Knapp, Copland and Talbert (2003)ii; 2) Infrastructure Framework explaining how technology can support education solutions.

This document provides a starting point for schools initiating the process of change and for others already on their journey. It provides suggested activities and resources that can serve as a tool for the many options available to sustain an on-going process of school innovation.

### Part 1: Innovation Framework

The Innovation Framework highlights four top dimensions in successful transformation. These dimensions are critical success factors individually but more effective when connected with each other.

1. Teaching, Learning and Assessment  
2. Building Capacity  
3. Leadership & a Culture of Innovation  
4. Learning Environment

For example, many innovative attempts to introduce student-centered, problem-based learning and technology-rich learning environments have not succeeded because they collided with existing—and sometimes outdated—assessment practices, or because professional development for teachers and leaders was underemphasized (e.g., Roschelle, Singleton, Sabelli, Pea & Bransford, 2008)iii. Using the Framework helps leaders think through each of the pieces of reform, how technology can successfully enable student outcomes, and how all the pieces interrelate.

### Leadership and a culture of innovation

This area of reform relates to developing, sustaining, and scaling school improvements. The elements highlighted in this area of the Innovation Framework are:

- Innovation Culture
- Leadership Development
- Learning Community
- Innovative Uses of ICT

How can the school develop a culture that is conducive to innovation?  
How can a school measure its success? What system of metrics should it employ?  
How does the management of a school relate to its ability to implement innovative practices?
Sustainable innovation becomes possible when innovation shifts from isolated examples to truly becoming embedded in the learning culture and part of the core value of the school. When a school is truly innovative, the personality of the school changes. True innovation is about creatively meeting the challenge of transforming practice rather than continuously improving upon old models. Michael Fullan says, “Learning is not workshops and courses and strategic retreats. It is not school improvement plans or individual leadership development. These are inputs. Rather, learning is developing the organization, day after day, within the culture.”

Additionally, successful innovation also requires that schools use technology-based analytical tools that help them measure student outcomes and identify students who are struggling academically and their areas of underperformance. By using such systems, schools can measure progress and make adjustments to increase student outcomes.

Suggested activities:

- **Discover what is possible.**
  Watch the [Qatar Education Transformation Video](#) to see how schools in Qatar have used technology to integrate with innovative teaching and learning practices. Read case studies of what some of the most innovative schools in the world are doing. If you are interested in 1:1 initiatives, watch this video focusing on schools around the world exemplifying how 1:1 can be used to transform learning and teaching practice.

- **Be innovative.**
  Being an Innovative Schools doesn’t mean giving a laptop to every student and shifting some walls around, it means changing the culture of the school and involving your community. Join the [Microsoft Innovative School community](#) and hear from a top education expert on what it means to become a Microsoft Mentor School.

- **Reflect on where you are today.**
  Explore each area of the Innovation Framework and how it can benefit your school. Reflect on where you are today and where you need to go to make transformative change within your school. The [Self Reflection Tool](#) is design you give you a starting point for your innovation journey.

- **Understand how to integrate and deploy technology into your school.**
  Review a framework which is designed for schools and school districts to use as they envision, plan, implement, evaluate and expand laptop initiatives in their schools. The [Microsoft Design and Deployment framework](#) is to provide you with the information and resources you need to support you as a leader in a contemporary learning environment.

- **Create your vision.**
  As a first step to being an Innovative School, leaders must create a sustainable vision for their school that involves parents, teachers, students and the community. Watch a video on how leaders from around the world redefined their vision. Watch an interview with a school leader creating her own vision. Watch a video on how to lead a shift in your institution.

- **Hear from Experts.**
  Discuss hot topics and hear from experts on issues such as Leadership and Strategic Innovation, Change Management and creating a Culture of Innovation.

Additional resources:


- Through a series of strategic Change Management Workshops, you are provided with a structure and a set of tools to encourage innovation in your school. These workshops have been designed to support building capacity within your organization, increasing the collective power of people to move systems forward by developing innovative practices.
Teaching, learning & assessment
This area of the framework relates to what and how students learn and how to rethink curricula. This area highlights four elements:

- 21st Century Skills & Standards
- Curriculum & the Learning Paradigm
- Assessment
- Innovative Uses of ICT

How should curriculum be designed, and how should students be assessed?
How can student-directed learning be encouraged?

School curricula and instruction is mostly didactic based on subject-based knowledge transmission and large amounts of rote learning. This ignores many skills that are increasingly necessary for life and work and often fails to engage students. By personalizing the learning processes and making learning accessible to students anytime and anywhere, students achieve far greater learning, higher satisfaction and improved learning outcomes. Technology skills for both teachers and students are crucial in the 21st century and technology should play a bigger role in the transformation of learning practices.

Suggested activities:

- **Access your school.**
  Conduct Partners in Learning School Research (PILSR) across the entire school. PILSR is a free survey for teachers and school leaders that will measure 21st Century teaching and learning skills in your school.

- **Incorporate 21st Century skills in lesson plans.**
  Work with your teachers to incorporate activities to build students 21st century skills. 21st Century Learning Design, or 21CLD, professional development helps teachers redesign their existing lessons and learning activities to build students’ 21st Century skills. It can be linked to your national or local curriculum standards.
  *Note:* 21st Century Learning Design professional development can be used in conjunction with the Partners in Learning School Research. The School Research measures innovative teaching and 21CLD supports teachers adoption of innovative teaching practices.

- **Enhance learning with technology.**
  Have your teacher review the Windows in the Classroom Seminar series. This series of videos show real world examples of how software and devices can be used to enhance the learning experience. Once they complete this series, they will earn a Windows in the Classroom badge.

- **Explore contemporary learning by watching this video.**
  Learn about Personalized Learning by watching this video about how Colegio Fontan school in Colombia is able to provide each student with their own personalized learning education plan. Listen to school leaders Larry Rosenstock from High Tech High in the US and Tony Bryant from Silverton Primary School in Australia talk about Project-based Learning.

- **Learn from experts.**
  Review and comment on different topics pertaining to the hot discussions going on in education. Education experts can answer your questions on Personalized Learning, Game Based Learning, 1:1 and much more. See all the Hot Topics on the Partners in Learning Network

Other resources:

- Innovative Teaching and Learning (ITL) Research: [www.itlresearch.com](http://www.itlresearch.com)
- **Modern Learner**
Capacity building

This area for reform on the Innovation Framework focuses on how teachers learn and teach and how to build capacity. This area highlights four elements:

- Professional Practice & Standards
- Peer Coaching & Mentoring
- Professional Development
- Innovative Uses of ICT

How can teacher skills be identified, taught and measured?
What kinds of training and development are needed, and how can their effects be measured?

As student learning must evolve so does teacher learning. It’s not just about going to workshops and teaching in isolated classrooms, it about continuous learning through supportive feedback where teachers can develop and practice the 21st century skills just like their students. Experts agree that true professional development involves establishment of a professional community focused on learning (e.g., Hargreaves & Stone-Johnson, 2009).

Suggested activities:

- **Get your teachers to become Innovative Educators:**
  Have your educators join the Partners in Learning Network and learn how to become a Microsoft Innovative Educator. They will be have access to a full Teaching with Technology curriculum to learn how to integrate technology into 21st century teaching and learning through the use of professional development and certification.

- **Build teacher capacity.**
  Point your educators to access free technology tools, learn how to incorporate technology into their activities through tutorials, and access and share learning plans. Watch a video on how Eunice High School in South Africa uses Peer Coaching techniques to build teacher capacity.

- **Create your community.**
  Improve practices and enhance students’ learning through Professional Learning Communities and discussions and discover new techniques to engage teachers and build their capacity by participating on the Hot Topics blogs on the Partners in Learning Network.

Other resources:

Learning Environments

Another area for reform on the Innovation Framework focuses on *where and when students learn*. This area includes several dimensions:

- Physical & Virtual Environments
- Formal & Informal Environments
- Innovative Uses of ICT

How can the school use technology for management, learning and communication? Can the school personalize its offerings and measure outcomes using technology?

To be an Innovative School, the learning environment needs to embrace the values of the school and create dynamic, flexible spaces for their learners. Virtual environments and communication technologies mean the contemporary school is mobile, highly efficient, results driven, self-directed and focused on collaboration. It needs to support learning in and out of school. Technology provides the opportunity to reimagine physical and virtual learning spaces to support new pedagogies and values the learner and their individual needs.

Suggested activities:

- **Realize the potential.** See examples of the best in educational facilities and their impact on the learning process. [DesignShare](http://www.designshare.com) is where more than 150,000 architects, planners, educators, and facility decision makers come to get ideas and resources about best practices and innovation in schools from early childhood through the university level.

- **Build a new school.** In this video, [Ritaharjun Yhtenäisperuskoulu](http://www.youtube.com/watch?v=Us4QIoTqaNQ), in Finland, a Microsoft Mentor School, shows the positive impact a new school has on both the school and the community. By incorporating colors, new furniture, open spaces and technology to inspire learners and helps students take the lead in their learning. Learning is best when children are enjoying it.

- **Ask an expert.** Taking the first step can be overwhelming, so ask questions and share comments with those experts who are working with schools every day to make their visions a reality. Topics around physical and virtual learning environments are addressed with helpful solution for all your questions.

Additional resources:


“Participating in the Microsoft Innovative Schools program contributed to our reputation, and inspired us as a learning community, as well as enabled us to reach out to other schools with a view to sharing the potential.”

Paul Cassar
Eunice High School
South Africa
Part 2: Infrastructure Framework

To support the 21st Century Learning, schools need an infrastructure in which everything works all the time, which can be accessed at anytime from anywhere, and which is safe and secure for students. To make it real, this document describes a few examples where technologies may be used to support 21st Century Learning. It also describes the overall Infrastructure Framework which can be on the school or district premises or “in the cloud”. The latter can be more cost effective for schools.

The following are a few examples of how technologies may be used innovatively to support learning.

a. Students can access their individualised learning plan and monitor their own progress before, during and after schools from a laptop, PC, tablet or smart phone.
b. Teachers could assign learning plans, monitor progress of all students and make adjustments as soon as required.

c. Students can organize their lessons, take notes and collaborate in a personal and shared notebook.
d. Students can collaborate with each other on the same project by sharing a project plan and by co-authoring on the output. This can be during or after school from anywhere.

e. Students can engage each other and with teachers, again at any time and from anywhere.

There are many other examples of where technologies may be used innovatively to support other aspects of the 21st Century Learning such as creativity, critical thinking and problem solving, self-directed learning, and further collaboration / team work.
The overall infrastructure framework consists of the following key components, the majority of which may be supported using Microsoft technologies.

The key characteristics of the infrastructure are:

- Secure – a infrastructure that balances the need for information access and safety for students
- Reliable – an infrastructure in which everything works and which schools can depend on for anywhere, anytime access
- Flexible – an infrastructure that enables and supports the needs of schools and students in the present and in the future

A Cloud infrastructure is one that is hosted and operated at Microsoft premises (and/or a third party premises). A Cloud infrastructure is designed to support many organisations and schools at the same time. Therefore, it is a very cost effective option compared to hosting at schools or districts.

The Microsoft Innovative Schools Program is an initiative that is helping schools around the world move beyond the limits of traditional classroom and learning models. Working with Mentor Schools for innovative thinking and best practices, the Innovative Schools Program is creating models that any school or system can use to prepare children for success.

The program offers different levels of engagement where district and school leaders with common interests can share experiences and learn from one another:

**Innovative Schools**
Schools with an interest to learn about inspirational leadership, proven records of innovation, and successful implementations of change. To become an Innovative School, complete all requirements on the Partners in Learning Network

**Mentor Schools**
Leading-edge schools with proven track records of innovation, who are interested in further transforming their institutions while mentoring others. Schools must apply on the Partners in Learning Network to be selected to be a Mentor School. For details and to apply at http://www.pil-network.com/schools/mentor

**World Tour Schools**
Recognized as global leaders of education innovation, these schools have applied their vision and demonstrated true innovation to re-imagine pedagogy and teacher capacity as well as improve student behavior, test scores, and the ability to develop 21st century skills. Schools are invited to be a World Tour School.

Join the most innovative schools in the world at http://www.pil-network.com/schools

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2 Published by Center for the Study of Teaching and Policy, University of Washington, Seattle WA. Both documents can be downloaded free of charge from the Center’s web site: www.ctpweb.org